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TEXAS STATE JOURNAL OF MEDICINE

Volume 46 Number 7 Austin, Texas, November, 1950

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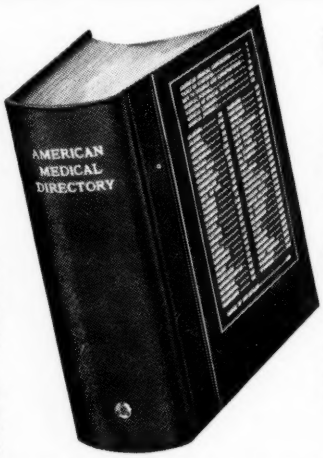

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President's Page

FREEDOM TO SECURE GOOD MEDICAL CARE

The President has been enjoying the fine hospitality of a number of districts recently. Not only has he enjoyed the cordial hospitality, but also the pleasure of some excellent scientific programs. It is evident that our doctors are determined to keep informed on all that medical research brings forth. Great tribute is due those of our membership who willingly give of their time, knowledge, and talent to visit these various meetings and bring the latest information on particular scientific subjects to doctors in their own community. This is the spirit that now characterizes and has characterized doctors down through the years and will characterize the true doctor as long as time shall be. It is this spirit that has caused American medicine to achieve more in the last fifty years than in all the rest of history combined.

Let us think for a moment how great it is that we enjoy the freedom to assemble together, at will, to learn. Also how wonderful it is that we have great men who enjoy the freedom of going about to teach. It all sounds simple and natural; we think this is the way things should be. It is the way things should be, yet we know that these freedoms are not universally enjoyed. It will pay us all great dividends if each of us will give a little more attention to making our freedoms secure.

Security is an intriguing word and one too loosely used at times. Some politicians would lead the public to believe that security is easy to obtain and easy to maintain. It is regrettable that this is not true, but it certainly is not. Perhaps the security of good medical care in the future can be considered in this way: Just as surely as we can keep the doctors, the researchers, and all other scientific groups who are interested in good medical care to the public free from government domination and preserve for the patient his freedom to choose his own doctor, just so certainly can we guarantee that the citizens of the United States will receive the best medical care in the world.

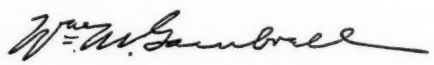
Underlying the sound basis upon which American medicine has

developed and accounting for its rapid progress is the freedom which has been enjoyed by the medical scientist and public alike—a freedom unchallenged until recently. That freedom now is being seriously challenged by social and welfare planners who will if possible plan our freedoms away from us. We must be prepared to meet this challenge.

I am pleased and encouraged by evidence of increasing concern of many doctors about the effort on the part of the administration to give medical care to the public while compelling that public to pay more taxes to the federal government. Many doctors and many of their patients see quickly that the government has nothing to give away. The government is worse than broke and cannot get anything else to give away until it has obtained power to take something else away from the people. When the government is made free (by law) to tax the public for compulsory health insurance money, the public submits (by law) to compulsion and gives up its freedom to use that money as it chooses. In this instance citizens will pay out money they will never see because it will come from the payroll. This money will never get into the take-home portion of salaries.

Here is something for the American people to think about. Even more, here is something for American doctors and the American public at large to talk about. The freedoms they give to the government are lost forever.

It is a great satisfaction to see the intense interest doctors have in maintaining high scientific standards for themselves. It is also gratifying to think that the number interested in preserving the freedom of the doctor and public is increasing.



P. S. Some county medical societies are now mailing out statements for dues for 1951 and are not including the A.M.A. dues of $25. I fear this is a serious mistake as most doctors would much prefer to pay all their dues at one time. A single statement also will avoid much confusion in billing and bookkeeping. Many counties have made the payment of A.M.A. dues compulsory.

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RADIO PROMOTION OF "HEALTHY LIVING"

Shortly after a group of Travis County leaders interested in education by radio decided that health is one of the important areas in which such methods can be effective, the Woman's Auxiliary to the State Medical Association was called on for help in developing and promoting the resultant program series, "Healthy Living in Our County." Now, with two years of experience to show that the participation-type broadcast designed especially for rural school children and their parents is indeed a successful and enjoyable activity, the Auxiliary through its Public Relations Committee is making the project one of its major objectives.

Although the idea of "Healthy Living in Our County" originated with the staff of the University of Texas in Austin, A. L. Chapman, Ph. D., director of the Bureau for Research in Education by Radio at the University, insists that the success of the project has been due to an almost phenomenally widespread cooperation and interest. He points particularly to the support of the Woman's Auxiliary to the State Medical Association, which has contributed funds totaling $2,000 (the largest financial contribution from a single source) to pay for printing and distribution of materials and is one of two organizations (the other being the State Health Education Council, in which the State Medical Association is represented) which this year considers "Healthy Living" one of its chief emphases.

Scripts for weekly programs for two school years are available and scripts for a third year are being prepared. All programs revolve around a quiz session in which teams of fourth, fifth, and sixth grade children from two schools compete in an attempt to answer the most questions asked by a master of ceremonies about a given health subject. A visiting expert in the health field under discussion acts as judge in case of dispute. Classes in the competing schools, those in other participating schools, and many parents listen regularly to the broadcasts, and preparatory and follow-up sessions under the supervision of teachers adapt each health subject to the local situation.

At least twenty-one counties in Texas broad-

casted the series last year, one of them using television facilities instead of radio. More than half that many counties are engaged in the broadcasts now or have plans for beginning them soon. In addition, "Healthy Living in Our County" has been adapted for use in New York, Illinois, Tennessee, Arkansas, New Mexico, and several other states. In Minnesota educators chose the Texas plan over a West Coast production using professional talent. Kits containing a book of scripts, a teacher's manual, and other material explaining how the program can be produced and the effective results which might be expected from it have been sent to each of the forty-eight states and by request to India, Alaska, Canada, the Virgin Islands, Puerto Rico, and the Philippines. A Spanish translation is being prepared.

Acceptance of the "Healthy Living" program has been universal. School children have fun taking part in and listening to the shows. Teachers find health an easier subject to get across to their charges. Parents appreciate the better health habits of their sons and daughters and privately are proud of their own increased knowledge. School, home, and community facilities and practices reflect wiser health attitudes. Professionally, too, the program has made a mark. It has received citations from the Institute for Education by Radio of Ohio State University "for demonstrating the great service potential of radio in meeting the considered needs of the listeners; and for skillful adaptation of the popular radio quiz format to educational purposes" and from the American Academy of Physical Education as "a concrete example of one excellent method of disseminating sound and scientific knowledge for the betterment of the health and physical welfare of boys and girls." In the thirty years of its existence the American Academy of Physical Education has awarded such citations no more than about a dozen times.

It is impossible here to go into detail about the scripts for "Healthy Living in Our County," the procedures to be followed in arranging with schools and radio stations for its production, and the specific results which accrue from the program. It must be evident from what has been mentioned, however, that the project is valuable and that the Woman's Auxiliary has an opportunity to be of real service to the communities where such a program can be put into effect. It should be noted that towns which have no radio station can cooperate with nearby towns which do have stations, the broadcasts of which can be heard in both communities. Furthermore, public address systems within a school can be used in place of an area-wide broadcast if necessary, and quiz programs based on the radio scripts can be developed within a school or a single classroom. Although these latter procedures fail to make the widest possible use of the material, they can be valuable educational adjuncts if radio broadcasts do not seem feasible.

Kits of materials pertaining to the project are available for the asking. Examples of illustrative photographs which may be had without charge through the courtesy of the University of Texas for use in posters and other publicity appear in the News section of this JOURNAL. Requests for kits, pictures, or help in the promotion of the program may be addressed to the State Medical Association office, 700 Guadalupe Street, Austin.

"Healthy Living in Our County" is a positive approach to health education, providing factual information for youngsters in a form pleasing to them and creating a community interest in health which consistently results in better habits and better facilities. Medical auxiliaries would search a long time to find a better project to support, for in encouraging this program, physicians' wives (and physicians, too) can demonstrate their desire to enhance health standards and performance within their communities. Auxiliary members in counties where the radio broadcasts have not been established are urged to take immediate steps to

interest school officials and radio program directors in making "Healthy Living in Our County" a weekly feature of their educational schedule.

GOVERNMENT STATUS GIVEN MEDICAL ADVISORY COMMITTEES

Dr. R. A. Trumbull of Dallas has been officially appointed chairman of the State Advisory Committee to the National Advisory Committee to the Selective Service System by Dr. Howard Rusk, chairman of the latter committee.

Other appointments to this committee by Dr. Rusk include Dr. George W. Cox, Austin, State Health Officer; Dr. B. Carl Holder, Cuero, representing dentists; and Dr. E. A. Grist, New Braunfels, representing veterinarians.

Dr. Rusk authorized Dr. Trumbull to appoint such additional members as he felt necessary to discharge the functions of the committee, and he added Dr. Hamilton Ford of Galveston; Dr. J. L. Cochran of San Antonio; and Dr. R. E. Windham of San Angelo. These appointments have been confirmed by the National Committee.

The new committee held its first meeting in Austin on November 2 with all members in attendance except Dr. Windham and Dr. Cox. Others attending the session were Dr. William M. Gambrell, President of the State Medical Association; Philip R. Overton, general counsel; Col. Morris S. Schwartz, representing the Texas Military District; Dr. L. P. Walter, representing Dr. Cox; N. C. Forrester of State Medical Association headquarters; and Tod Bates, Executive Secretary.

Dr. Trumbull read a telegram from Dr. Rusk authorizing him to appoint procurement and assignment committees (advisory committees) at the county level. Such committees have been appointed but heretofore have not had official government standing.

Colonel Schwartz read the following operations bulletin from headquarters, Selective Service, Washington:

REOPENING THE CASES OF SPECIAL REGISTRANTS

"Local boards are hereby requested to reopen and consider anew the case of any special registrant at any time prior to the issuance of an order to report for induction if the State Medical Advisory Committee or a local Medical Advisory Committee submits evidence in the case and requests a reopening for the purpose of having such evidence considered.

"State and local Advisory Committees are being appointed as rapidly as possible by the National Advisory Committee authorized under Public Law 779 and recently appointed by the President.

"The request made in this operations bulletin and the actions recommended are for the purpose of affording the Advisory Committees the time and opportunity to consider fully and recommend upon all cases of special registrants in whose cases they wish to submit information to local boards regarding the essentiality of such registrants to the maintenance of the national health, safety or interest."

Dr. Rusk has asked Dr. Trumbull's committee to make an immediate survey of the number of interns and residents who registered in compliance with the new amendment to the Selective Service Act, generally referred to as the "doctors' draft." This survey is now being made.

Military authorities estimate that first inductees under the new law will probably be called during December.

Present regulations issued by the Defense Department and Army and a policy statement by Dr. Rusk offer some help in clearing confusion on the doctor-draft. Dr. Rusk says that registrants making applications for reserve commissions up to the time they actually are inducted will be eligible for the $100 per month pay bonus, when and if the commission is finally granted. However, if they delay application until after induction, the $100 monthly bonus is denied. Under Dr. Rusk's interpretation, a registrant may apply for a commission even during the twenty-one day period between notice to report for induction and induction. A Navy spokesman concurred in this policy. However, the Army Surgeon General's Office states that men will *not* be granted commissions during this period.

In a policy directive to all three services,

the Defense Department announced that priority one physicians applying for reserve commissions *prior to receipt of notice to take their physicals* will have their choice of (branch of) service, providing they are acceptable to that service and it has use for them.

PHYSICIANS AS PEACEMAKERS

"Physicians by their thinking, spirit and effort can set an example for governments, diplomats and people everywhere to preserve the peace." Thus Dr. Elmer L. Henderson, Louisville, Ky., expressed an important objective for the World Medical Association when he assumed its presidency the latter part of October in New York at the fourth general assembly. Dr. Henderson, also president of the American Medical Association, spoke to 500 medical leaders representing twenty-eight of the forty-one nations which constitute the worldwide organization of national medical associations.

The hope inherent in Dr. Henderson's words should be taken seriously by physicians everywhere. As scientists and humanitarians who traditionally have been held in high regard by their fellows, physicians are in a peculiarly advantageous position to develop international understanding. Through the World Medical Association, a volunteer organization of professional associations; through the World Health Organization, a United Nations affiliate comprised of governmental health agencies; and through exchange of scientific information by means of publications and international societies, workers in the field of health and medicine can become better acquainted with each other and can disseminate knowledge of techniques, new drugs, and preventive methods which will help raise the level of health throughout the world. Good health contributes much to contentment, and contentment begets peace.

Individual physicians who are not in places of leadership in international organizations may feel that they cannot have and need not have a part in developing world understanding. Nevertheless, each person who is interested in generating good will can help by becoming informed about international programs, by discussing them with others, by supporting them financially or by vote, and by learning more of the national and racial culture of other people so as to appreciate their admirable qualities and understand their problems.

The season of Thanksgiving this year might well be a time for thinking gratefully of the steps, faltering though they sometimes appear, which have been taken in the past five years by the United Nations, the World Health Organization, the World Medical Association, and a host of other organizations and agencies toward the development of world peace. It should be a time also for dedicating the future to further efforts to raise the health and living standards of people everywhere by helping them to help themselves, to the advancement of understanding and tolerance where ignorance and distrust now exist, and to the activation of a faith that problems can be solved by discussion and arbitration instead of by force.

"With each year has come a deeper realization that members of the medical profession are the true international diplomats of peace," Major General Bryant E. Moore, superintendent of the United States Military Academy at West Point, told the World Medical Association delegates. "Your influence is based upon the esteem in which peoples of all countries hold the profession of medical sciences. It is not improbable that a road to permanent peace will be found through your efforts to expand the horizons of medicine."

Were these words of Dr. Henderson, the physician, and General Moore, the soldier, mere oratory? Perhaps, but it might be surprising to discover how much physicians and their families can contribute to the creation of a brighter future if they will exert their influence toward the development of good will among their neighbors across the back fence and their neighbors halfway around the world.

ORIGINAL ARTICLES

SOME ASPECTS OF THYROID DISEASE

I. Ocular Manifestations of Thyroid Disease

PAUL A. CHANDLER, M.D., Boston, Massachusetts

Of the ocular manifestations of thyroid disease, exophthalmos is the most prominent. There is a question as to whether the exophthalmos always has the same pathogenesis or whether it can be divided into two types. On the basis of the clinical manifestations it appears that there are two fairly distinct types, with each of which are associated various other ocular signs.

NONCONGESTIVE EXOPHTHALMOS

The first type is commonly associated with ordinary clinical hyperthyroidism or Graves's disease, and may be designated benign or dysthyroid noncongestive exophthalmos. It may be unilateral, though usually bilateral, and may be more severe on one side than the other. It may precede other clinical evidence of Graves's disease. This type of exophthalmos is ordinarily not marked in degree. There is good resiliency of the orbital tissues. By pressure on the lids, the eye can easily be pushed back to its normal position. Retraction of the upper lid, producing the characteristic staring expression, is commonly associated with the exophthalmos, and there is lid lag on downward gaze. There is usually no diplopia or muscle weakness, though there may be poor convergence. There is usually little if any edema of the lids. Noncongestive exophthalmos may subside, or at any rate does not progress, when the basal metabolism rate is reduced to normal. There are no associated characteristic pathologic changes in the orbit.

CONGESTIVE EXOPHTHALMOS

The second type of exophthalmos may be called the dysthyroid congestive type. It is sometimes referred to as malignant or thyrotropic exophthalmos. This type is seen most commonly after thyroidectomy when the basal metabolism rate is subnormal, but it may develop before treatment in some cases and may even occur without any evidence of hyperthyroidism. It usually begins within two weeks after thyroidectomy, but may manifest itself months or years later.

Read at a General Meeting, State Medical Association of Texas, Annual Session, Fort Worth, May 3, 1950.

The congestive type of exophthalmos is characterized by lack of resiliency of the orbital tissues and other signs of orbital infiltration. The exophthalmos can be reduced little if any by pressure on the lids. Various ocular muscle palsies are commonly associated with the condition. More or less weakness of upward gaze is the most frequent. The lateral muscles are involved next most frequently, and the depressor muscles least frequently. Diplopia is a common symptom. There is usually evidence of passive congestion in the orbit with dilatation of the conjunctival vessels. Particularly noticeable are the dilated veins over the lateral rectus muscles. At times the physician can see the outline of the swollen lateral rectus muscles through the conjunctiva. There is usually finger-like edema of the lids, particularly the upper lids, and the conjunctiva may be chemotic. Lid lag on looking down is not usually evident. On the contrary, retraction of the upper lid is usually more marked on attempted upward gaze.

Pathologically there is marked edema of all the orbital tissues, with more or less round cell infiltration. This infiltration is especially noticeable in the extraocular muscles.

Dysthyroid congestive exophthalmos may progress to the extent that the lids cannot be closed properly. Exposure keratitis may develop, resulting in loss of the eye if the exophthalmos is not reduced. When this type of exophthalmos develops, it usually increases steadily up to a certain point and then stays the same or gradually regresses. An evidence of improvement without the actual receding of the exophthalmos may be an increase in resiliency of the orbital tissues. In the majority of instances the process stops short of a degree which endangers the eyes. In a few cases decompression of the orbits must be carried out, either by unroofing the orbit (the Naffziger operation) or by doing an ethmoidectomy (the Schall operation). In rare cases various defects of the visual fields may develop, and central vision may sometimes be affected.

The analogy of this type of exophthalmos with that produced in guinea pigs by injection of thyrotropic hormone after thyroidectomy (Smelzer[2] and Paul-

son[1]) has given rise to the general belief that the pathogenesis of this condition relates to an excess of the thyrotropic hormone. However, it should be noted that this excess, which is so readily demonstrable in guinea pigs, has not been found consistently in human patients with this type of exophthalmos.

If congestive exophthalmos is present before treatment of the hyperthyroidism is undertaken, it is generally considered wiser to treat the patient conservatively with thiouracil or radioactive iodine, rather than with subtotal thyroidectomy. The sudden reduction in thyroid hormone brought about by operation is thought to call forth an increase in the thyrotropic hormone from the pituitary gland, which may be responsible for the exophthalmos. General treatment consists in the administration of thyroid extract to the point of mild thyrotoxic symptoms. Thyroid treatment is sometimes combined with iodine. Irradiation of the orbits or of the pituitary has been done with equivocal results.

Local palliative treatment consists in the instillation of a mild ointment into the eyes at night and the wearing of protective goggles during the day to prevent drying of the cornea and conjunctiva. Blepharoplasty of the outer third or fourth of the lids is helpful in some cases. The wearing of a pressure bandage at night is sometimes of value in lessening the edema of lids and conjunctiva.

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5 Bay State Road.

SOME ASPECTS OF THYROID DISEASE

II. Cardiovascular Signs of Thyroid Disease

THOMAS J. DRY, M.B., Rochester, Minnesota

CERTAIN cardiovascular changes may be expected in thyroid disease, whether it be hyperthyroidism or hypothyroidism.

HYPERTHYROIDISM

The heart in hyperthyroidism can be compared with the normal heart during fairly strenuous exertion. In response to an increased demand for oxygen by all tissues, including those of the heart itself, the heart rate is accelerated, the cardiac output is increased, the circulation time is shortened and venous return to the right side of the heart is increased.

The tachycardia of hyperthyroidism is characteristically constant and is present even during sleep. This is in marked contrast to nervous tachycardia, which varies greatly under different circumstances. Auricular fibrillation is a frequent occurrence in hyperthyroidism. The augmented venous return is reflected in many instances by fullness of the pulmonary arterial trunk as seen roentgenographically and roentgenoscopically. This is a reversible change, since it disappears after the hyperthyroid state has been controlled. It is conceivable that the distention of the right auricle under these circumstances may be a factor in the production of auricular fibrillation. Systolic murmurs, especially of the pulmonic valve, are common. The systolic blood pressure tends to be elevated and the diastolic blood pressure tends to be lowered; this wide range of pulse pressure often produces the peripheral circulatory phenomenon seen in aortic regurgitation, namely, a water-hammer type of pulse with or without capillary pulsation, and pistol-shot sounds over the larger peripheral arteries. Bruits may be heard over the thyroid gland itself. Congestive heart failure of varying degree may be present.

In the majority of instances in which congestive heart failure does occur, there is some associated organic heart disease, although it is conceivable that prolonged hyperthyroidism eventually may result in congestive heart failure, even though the heart is normal. There are no demonstrable morphologic changes specific of hyperthyroidism. It is possible that there may be disturbances of phosphocreatine metabolism, although this has never been satisfactorily demonstrated.

HYPOTHYROIDISM

The cardiac manifestations of myxedema, when present, consist of cardiac enlargement to both the right and the left. The cardiac silhouette then appears as it does in pericardial effusion. In many cases of myxedema the amount of fluid in the pericardial sac is increased. The clinical manifestations may vary between simple diminution of tolerance of exercise and severe degrees of congestive heart failure.

The electrocardiographic changes consist of flattening or inversion of the T waves in all leads, usually with QRS complexes of low amplitude.

From the Division of Medicine, Mayo Clinic.
Read at a General Meeting, State Medical Association of Texas, Annual Session, Fort Worth, May 3, 1950.

SOME ASPECTS OF THYROID DISEASE

III. Differential Diagnosis of Thyroiditis

FRANK W. KONZELMANN, M.D., Atlantic City, New Jersey

INFLAMMATION of the thyroid gland as a specific process is not common. The thyroid tissue is strikingly resistant to infection by the common bacteria. When acute bacterial thyroiditis occurs, it is either a part of a general systemic infection, the extension of local infection by contiguity, or it is induced by trauma. Inflammation may occur in a gland which is already the seat of goiter. This complication is spoken of as strumitis. Varying degrees of strumitis will be found in many glands removed because of toxic symptoms, wherein the inflammatory process is brought about by degenerative changes and hemorrhage. In such cases the inflammatory process is overshadowed by the morphologic changes incident to the physiologic disturbance and its signs and symptoms are apt to be of little clinical significance.

ACUTE THYROIDITIS

Acute Suppurative Thyroiditis.—The clinical signs in acute suppurative thyroiditis will be those of any suppurative lesion. The onset is sudden; there is local pain, tenderness, and swelling. Regional lymph nodes are enlarged. Abscess formation may occur. Fever and leukocytosis occur, varying in severity with the extent of the lesion and toxicity of the invading organism. If the gland is incised for drainage of an abscess, the usual signs of suppuration—necrosis, edema, hemorrhage, and leukocytic infiltration—will be observed.

Acute Nonsuppurative Thyroiditis.—Acute nonsuppurative thyroiditis presents signs and symptoms similar to acute suppurative lesions but less intense. Acute miliary tuberculous thyroiditis has been described but it is apparently rarely encountered.

CHRONIC THYROIDITIS

Chronic thyroiditis is a condition seen more frequently than the acute phase. A discussion of the differential diagnosis of thyroiditis resolves itself into a discussion of the differential diagnosis of Riedel's struma and Hashimoto's disease. There is considerable difference of opinion concerning the relationship of these two diseases. Many consider Riedel's struma as a late stage of Hashimoto's disease, and many consider them as distinct disease entities. It will be noted that Riedel's struma occurs at an earlier age period and by the majority of writers seems to occur with equal frequency in both sexes. If these two were simply stages of one disease, the reverse of the age groups and a similar distribution between the sexes would be expected.

Riedel's struma is relatively uncommon. The average age of patients with diagnosed cases is 40 to 45 years. The earliest symptom is usually a firm, nonsymmetrical enlargement of the thyroid gland. Toxic symptoms or evidence of hypofunction rarely occur early. The basal metabolic rate is within normal limits; it may be slightly elevated or depressed. Symptoms of pressure or compression of the trachea, esophagus, larynx, blood vessels, and neighboring nerves develop with varying severity. Edema and difficulty in swallowing may follow. Hoarseness and occasionally aphonia have been reported. Although the disease begins in one lobe, it may spread to the opposite side. It is reported that in 70 per cent of the cases the entire gland is involved. In an established case I have been impressed with the unusual hardness of the gland, an observation which led many others to apply the name "woody thyroiditis." The most common error in diagnosis is to consider the lesion malignant. The extreme hardness, the indefinite borders, the absence of nodules, and the fact that carcinoma usually develops in a preexisting goiter, all serve to distinguish this lesion from neoplastic disease. The disease may remain stationary for weeks or months and then

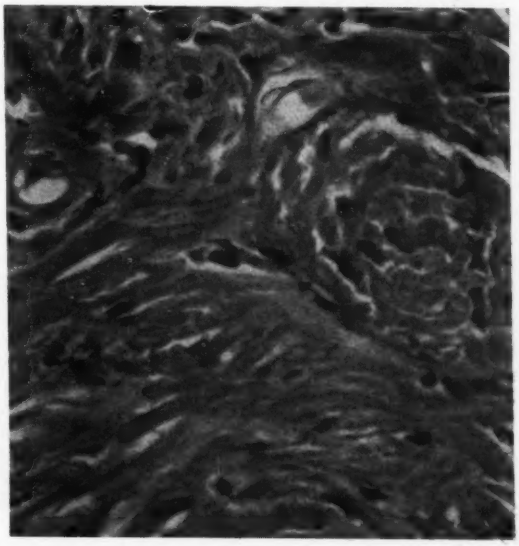

FIG. 1. Photomicrograph illustrating the dense fibrosis which occurs in Riedel's struma. The fibrosis accounts for the hardness of the thyroid gland. There were areas of normal appearing acini surrounded by this dense connective tissue.

From the Atlantic City Hospital.
Read at a General Meeting, State Medical Association of Texas, Annual Session, Fort Worth, May 3, 1950.

finally subside, leaving only a sclerosed gland. Myxedema does not occur despite the degree of destruction of the thyroid tissue.

If surgery is attempted, the inflammatory process is found to extend beyond the capsule of the gland. It is densely adherent to surrounding structures and usually complete removal is impossible. Grossly the area of involvement or the whole gland, if it is so involved, is white, firm, and fibrous. Microscopically there is diffuse dense fibrosis. Within the fibrous masses patches of thyroid glandular tissue containing a normal appearing colloid may be seen. In the earlier stages, the fibrous tissue is not so dense; it is cellular and collections of inflammatory cells may simulate Hashimoto's disease. The tissue is avascular; such vessels as persist may be so firmly fixed in the dense stroma that they fail to collapse when incised and therefore bleed freely. Microscopically the vessels are characterized by a perivascular fibrous cuff. The intima and media are distinctly thickened.

A giant cell variant of Riedel's struma in which the histologic picture is distinctly granulomatous has been described. The nature of the giant cells is debatable. In all likelihood they are foreign body giant cells which have responded to a degenerative process in the glandular epithelium. Some pathologists consider them to be syncytial masses of glandular epithelium. One case of Riedel's struma has been encountered in this hospital in the last five years. A clinical diagnosis of carcinoma was made and removal was attempted. A surgeon encountered a dense fibrous infiltration of the entire gland and surrounding structures. It extended laterally and far beneath the clavicle. Sufficient tissue was removed to permit thorough histologic study. The characteristic picture of Riedel's struma was revealed (fig. 1).

Hashimoto's disease occurs chiefly in women at the menopause. This disease is slow in onset. The patient usually consults her physician because of goiter. One of our patient's chief complaint was nervousness. Signs of hyperthyroidism are lacking. The basal metabolic rate is normal or depressed. Difficulty in swallowing, hoarseness, and myxedema may occur. Compression symptoms are usually mild. The blood picture may reveal a slight lymphocytosis. Physical examination reveals a diffuse bilateral enlargement of the gland. It is firm, smooth, and tender on pressure and is freely movable. When exposed, it is not adherent to surrounding structure and is usually pale pink or yellow. The surface is characteristically smooth, but sometimes small nodules formed by collections of lymphocytes are encountered. It is not vascular. The color of the cut surface is variable, depending on the degree of lymphoid infiltration. The color ranges from pale red to grayish yellow.

Histologically the picture is characteristic. There is an abundance of lymphoid tissue with follicle formation. Here and there collections of acini are seen. They

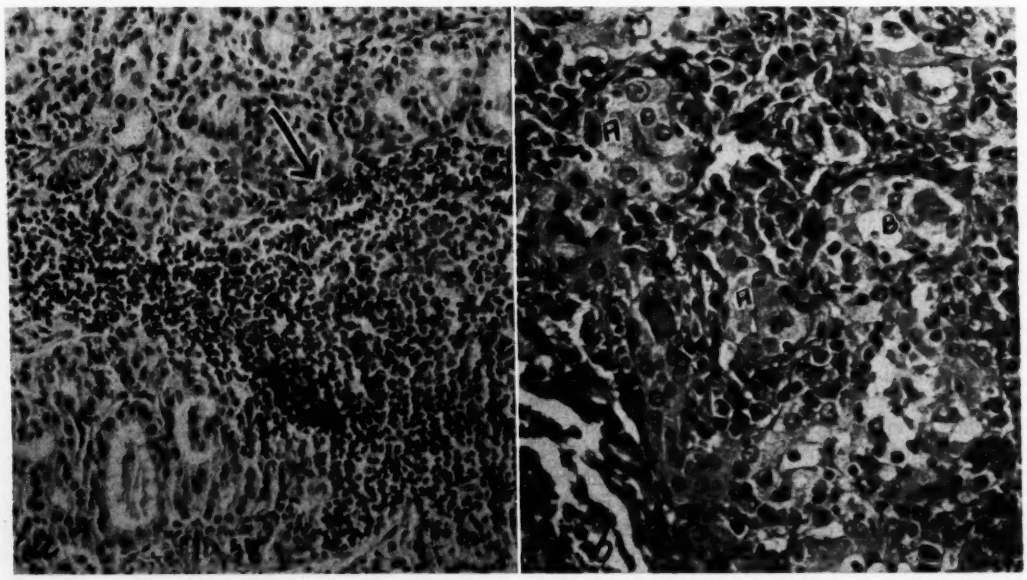

FIG. 2a. Photomicrograph illustrating Hashimoto's disease. The arrow points to a collection of lymphoid tissue including a germinal follicle. There were other, denser collections of lymphoid tissue which obliterated the normal architecture. Note the lack of colloid within the acini. Many of the acini contain large cells resembling monocytes.
b. Another photomicrograph illustrating Hashimoto's disease. At *A* the slidlike character of the lumen of the acinus may be seen. It is produced by the swelling of the lining cells. Sometimes the swelling of one or two cells is extreme (*B*) and the increase in nuclear size together with the coarseness of nuclear markings may suggest malignancy. For this reason an erroneous diagnosis of carcinoma may be made.

are usually small and the lumen is slitlike, as if compressed. The lining cells are cuboidal; the colloid stains lightly or is frequently lacking. In the lumen of some acini, collections of cells which resemble giant cells are seen. They are considered by some to be desquamated epithelium; others consider them phagocytic cells. Helwig has described peculiar alterations in some acinar cells. They appear swollen and of irregular outline. The cytoplasm is granular and strongly eosinophilic. The nuclei are also irregular and stain deeply. Sometimes these cells are seen in solid strands surrounded by lymphocytes (fig. 2).

In this hospital in the last five years we have encountered 6 cases, the clinical features of which are shown in table 1.

Emergency Hospital, 1711 New York Avenue, N. W., Washington 6, D. C.

TABLE 1.—*Clinical Features of Struma Lymphomatosa Observed in 6 Patients at the Atlantic City Hospital.*

Patient	Age (yr.)	Sex	Color	Nervousness	Palpitation	Weight	Appetite	Tumor	Choking	Hoarseness	Tremor	Basal Metabolic Rate: Preoperative	Basal Metabolic Rate: Later	Basal Metabolic Rate: Latest	Pregnancies	Preoperative Diagnosis
1	39	F	W	+1	0	gain	+3	smooth	yes	0	0	—29 (May '38)	+8 (June '41)		2	no
2	35	F	W	+2	+2	0	+	nodular	0	0	+2	—17 (May '46)	—36 (Aug. '46)	—27 (Mar. '47)	2	no
3	46	F	W	+1	0	0	+1	nodular	0	0	0	+3		+3 (Apr. '47)	2	no
4	46	F	W	+3	+1	gain	+2	nodular	0	+1	0			—33 (Feb. '47)	2	?
5	32	F	W	+2	0	gain	fair	nodular	+2	+1	0	—8			3	yes
6	40	F	W	+2	+1	0	+1	smooth	0	+1	0	—19			2	yes

SOME ASPECTS OF THYROID DISEASE

IV. Radioiodine in Evaluation and Treatment of Hyperthyroidism

HOWARD B. HUNT, M.D., Omaha, Nebraska*

THE investigation, evaluation, and treatment of thyroid disorders have benefited significantly from radioiodine during the past decade. An understanding of thyroid physiology is basic to the utilization of radioiodine in clinical practice or research. Its use as an indicator of thyroid physiology and iodine metabolism was introduced by Hertz in 1938 and by Hamilton and Soley[3] in 1939. Hyperplastic thyroid glands were shown to accumulate iodine more rapidly and to retain a relatively larger percentage of the administered dose after twenty-four and forty-eight hours than did normal thyroids. The role of the pituitary gland through its thyrotropic hormones in governing the assimilation of iodine by the thyroid[5] is now recognized as the basic factor in control of thyroid function. Thyroid hyperplasia is induced through thyrotropin secreted by the pituitary in response to a deficiency in the level of circulating thyroid hormone. Excessive stimulation promotes Graves's disease and recurrent thyrotoxicosis and increases the functional capacity of alveolar carcinoma of the thyroid.

The elaboration of thyroid hormone is dependent on the active oxidation of iodide to elemental iodine and the enzymatic synthesis of thyroglobulin. The processes occur within the thyroid, probably by way of some oxidative enzyme system activated by pituitary thyrotropin.[8] The antithyroid drugs such as thiouracil are reducing agents and appear to block the iodination of further thyroid protein. The already elaborated hormone continues to be released for from three to five weeks, and the thyroid hypertrophies as the circulating hormone level falls. Administration of excess iodine, as by Lugol's solution, not only interferes with the organic binding of iodine[12] but also inactivates thyrotropin[7] and possibly reduces thyrotropic secretion, thereby preventing hyperplasia of the thyroid gland.

Recovery of thyroid function as shown by iodine assimilation occurs rather promptly within a few days after discontinuance of antithyroid drugs. Recovery after stopping iodide is slower, requiring a period of a few days to three or four weeks depending on the existing degree of saturation and blockage. The avidity of the thyroid for iodine tends to be increased by administered or secreted thyrotropin and by an iodine deficient diet. Foods or medications containing sulfurous antithyroid radicals, such as rutabaga and cabbage or the sulfonamides, and those rich in iodine, such as sea foods or Priodax, Diodrast, or cough medicine, reduce the uptake and retention of iodine by the thyroid. Potassium thiocyanate as used in treatment of hypertension inactivates the enzyme system essential to the oxidation of iodine and its binding by tyrosine in the elaboration of thyroxine within the thyro-

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globulin molecule.[8] The systemic effects of thyroid hormone seem to result from acceleration of enzymatic processes generally and may be somewhat reduced by ovarian and certain adrenal cortical hormones. The precise mechanisms of synthesis, blockage, and action of thyroid hormone are receiving much needed further investigation.

Radioiodine (I^{131}) behaves chemically and metabolically exactly like ordinary iodine (I^{127}). Radioiodine differs by emitting radiations which permit the detection and accurate measurement of assimilated iodine from outside the body by means of a Gieger-

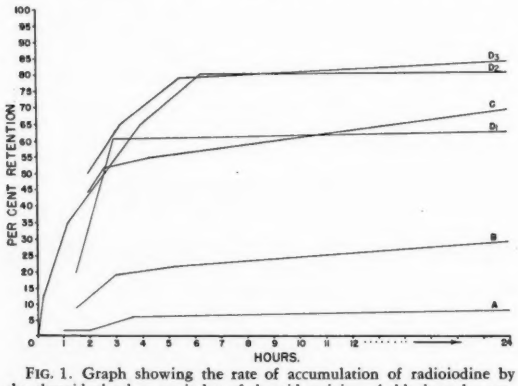

FIG. 1. Graph showing the rate of accumulation of radioiodine by the thyroid gland as an index of thyroid activity; *A*, blockage by prolonged use of Lugol's solution; *B*, euthyroid state; *C*, toxic nodular goiter; D_1, D_2, and D_3, diffuse toxic goiter.

Mueller counting unit. Radioiodine accumulated by the thyroid for synthesis of hormone can be traced radiometrically. High specific concentration of iodine by the thyroid gland makes it an ideal vehicle for delivery of inactivating radiation to a hyperplastic thyroid. Emitted radiations consist of high intensity, low energy beta rays with a maximum penetration of 1 to 2 mm. of tissue, and deeply penetrating gamma rays equivalent to 375,000 volt roentgen rays. The intensity of radiation falls progressively, being reduced to one-half every consecutive eight days, the physical half life.

EVALUATION OF DISORDERS

Judicious appraisal of thyroid activity is based primarily on clinical evaluation supported by various laboratory determinations. The diagnosis of severe thyrotoxicosis is obvious. Severe anxiety states may clinically simulate mild hyperthyroidism and show confusing elevation of pulse and metabolic rate. Revelation of a basis for anxiety and its support by complaints of constriction in the neck and loss of energy, hyperactive reflexes, wide variability of pulse rate, and evidence of sighing on the basal metabolic rate record suggest anxiety rather than thyrotoxicosis. Patients with pure anxiety states may benefit from insight and sedation but not from antithyroid therapy. Observation of sleeping pulse rate, repetition of the basal metabolic test under Seconal, determination of protein bound plasma iodine, and measurement of rate of accumulation and twenty-four hour retention of radioiodine provide more objective laboratory data for differential diagnosis.

The rate of assimilation of radioiodine and its retention by the thyroid gland is an index of the active production of thyroid hormone. On the other hand, symptoms and metabolic rate are manifestations of old previously elaborated hormone. Therefore, the development of a remission can often be foretold by reduced radioiodine accumulation even though pulse and metabolic rates still remain high.

The procedure for radioiodine determination is rela-

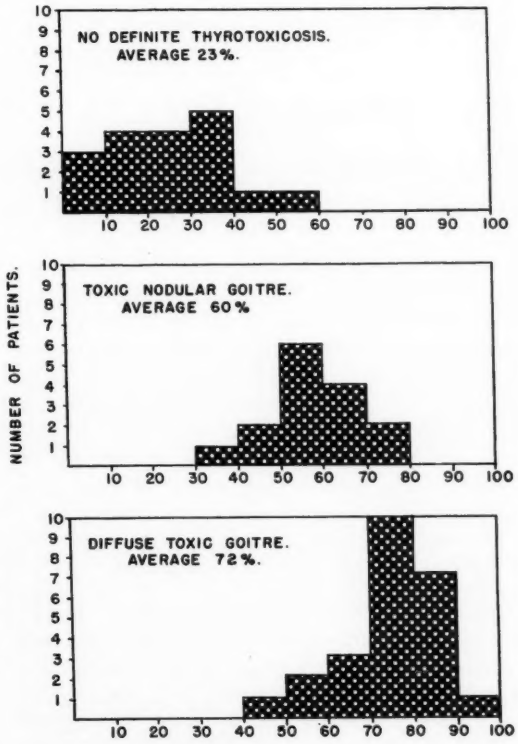

FIG. 2. Graphs showing the relative twenty-four hour retention of radioiodine in the thyroid gland by euthyroid and hyperthyroid patients.

tively simple. A measured dose of 50 to 100 microcuries of radioiodine is given orally to the fasting patient. Measurements are made over the thyroid with a collimated counter after five hours[6] and usually at two and twenty-four hours also.

The normal thyroid gland usually accumulates 15 to 30 per cent and rarely more than 40 per cent of the administered dose after five hours and about the

same after twenty-four hours (fig. 1 and 2). Hypothyroid patients retain not more than 5 per cent, which permits differentiation of cretins from mongoloids and effective treatment of the former by thyroid extract. More than 90 per cent of thyrotoxic patients show 50 to 90 per cent retention after five hours and twenty-four hours. My studies show an average twenty-four hour retention of radioiodine in patients with diffuse toxic goiter of 72 per cent, which is somewhat higher than in toxic nodular goiters, 60 per cent.

Thyroids blocked by preceding administration of antithyroid drugs or iodide usually show a hypothyroid curve with only about 5 to 15 per cent retention. The assimilation of iodine by the thyroid gland may increase sharply after discontinuance of thiourea derivatives because of thyroid hyperplasia and overproduction of thyrotropin stimulated by depletion of circulating thyroid hormone. All patients must be questioned particularly as to previous medication by sulfonamides, thiourea derivatives, iodides, and recent

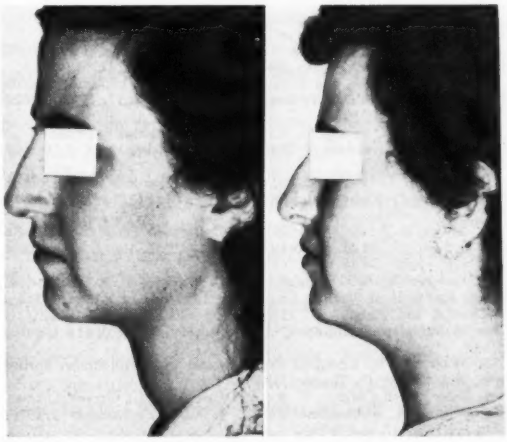

FIG. 3. Photographs of a patient with diffuse thyrotoxicosis showing clinical remission and subsidence of goiter within ten weeks after one administration of radioiodine.

roentgen-ray studies using iodized radiopaques. If the percentage accumulated within five hours or retained after twenty-four hours is not entirely consistent with the clinical findings and no explanation is apparent, the determination should be carefully repeated after a few days. Assimilation of radioiodine by the thyroid gland is a metabolic indicator of hormone production and shows a high index of correlation with clinical aspects of thyroid disorders.

Individual consideration of thyrotoxic patients is essential for the proper selection and management of therapy.[11] Disturbing psychogenic irritations and depletion of cardiac and bodily reserve must be recognized and treated accordingly. Nontoxic nodular goiter warrants consideration of carcinoma and merits surgical resection. In children less than 15 years of age, 40 per cent of nodular goiters are carcinoma, and in adults with single nontoxic nodules from 15 to 24 per cent are carcinoma. Carcinoma occurs in not more than 1 per cent of toxic nodular goiter and almost never in diffuse toxic goiter.

Diffuse toxic goiter, so-called Graves's disease, promises a more certain, prompt, and dramatic response to radioiodine than does toxic nodular goiter. Toxic nodular goiter occurs most commonly in older patients suffering from symptoms referrable to depleted cardiac reserve and general debility, often aggravated by anxiety. In general, the lower the retention of radioiodine and the more prominent the neurogenic and nonthyrotoxic symptoms, the poorer is the anticipated response to radioiodine. Colloid goiter and symptoms referrable to mechanical compression or disfigurement should be treated surgically.

TREATMENT OF THYROTOXICOSIS

I have treated 60 patients with thyrotoxicosis by radioiodine during the past thirty months. Forty-two patients had diffuse toxic goiter; in all of them satisfactory remissions have eventually occurred although 3 cases required additional treatment for recurrence. Clinical remissions with reduction of goiter occurred within two to three months after one administration of radioiodine in about half the cases. Two patients with diffuse toxic goiter developed a mild transient hypothyroidism warranting placement on thyroid extract, 1 grain daily.

Evaluation of response by the toxic nodular goiter cases is confused by associated cardiac damage, debility, and anxiety. The goiter shrinks about one-third. Improvement requires from two to five months with repeated radioiodine administrations in the majority of cases. Significant hypothyroidism has not occurred in the nodular cases even after repeated and large total dosages. Many thyroid clinics treat all operable nodular goiters by subtotal thyroidectomy.

Sixteen of the various cases treated by me represent postoperative recurrence of thyrotoxicosis; all have shown good remissions. The response of 45 cases treated prior to one year ago show reduction of the average basal metabolic rate from +44 to —3. The average sitting pulse rate was decreased from 114 down to 80 per minute. The average gain in weight was 11 pounds.

The dosage of radioiodine is satisfactorily expressed in terms of microcuries retained per gram of thyroid. In the case of diffuse toxic goiter, I use an initial dose of 80 microcuries and in toxic nodular goiter 120 microcuries retained per estimated gram of thyroid. It has been calculated by Quimby that 1 microcurie delivers a total of 144 equivalent roentgens of beta

radiation and 13.8 to 18 gamma r per gram of thyroid, depending on the size and shape of the gland. Calculation of dosage in roentgens implies a physical accuracy which is not yet attained in clinical practice. The percentage retention can be predetermined rather accurately by a preceding test dose. Errors in estimation of thyroid weight have been shown by Soley to range from 42 per cent below to 31 per cent above actual weight. The biological half life (B.H.L.) or index of elimination of radioiodine from the thyroid after twenty-four hours averages six days but varies individually from two to eight days. As mentioned previously, the physical half life of radioiodine decay is eight days. Dosage can be calculated according to the following formula as developed by Quimby:

$$\frac{\text{Microcuries admin.} \times \%\ \text{retained}}{\text{Thyroid Wt. in Gm.}} \times \frac{\text{B.H.L.}}{8\ \text{days}}$$

$$= \text{Microcuries retained per Gm.} \times 160 = \text{Equivalent roentgen potential}$$

A period of two months is allowed for evaluation and before administration of a second dose is considered.

No serious complications have occurred in my series of 60 cases treated by radioiodine. Myxedema has not been observed although the basal metabolic rate occasionally has dipped to —20 after six months. The occurrence of myxedema in 7 per cent of exophthalmic goiters as reported by Haines and others[2] seems attributable to the rather large doses of 150 to 240 microcuries per gram of thyroid. A transient aggravation of thyrotoxicosis during the first two weeks has occasionally been manifested by some increased nervousness, tachycardia, and slight swelling of the ankles. This reaction results from hormone released by the thyroid gland being broken down by irradiation. In the event of aggravated toxicity, sedation and rest are indicated; highly toxic and cardiac patients should be so advised in advance. Such toxic reactions are unusual and can be avoided by a preceding short course of propylthiouracil or by administering fractionated smaller dosages of radioiodine to critically ill patients. Soley has shown the occurrence and degree of exophthalmos to be less after radioiodine than after surgery. I have treated exophthalmic goiters concurrently by pituitary irradiation as well as by radioiodine.

Radioiodine is superior to roentgen rays for irradiation of thyrotoxicosis because of its selective accumulation by the functionally active cells with minimal irradiation of skin and adjacent tissues. Response is more rapid than after roentgen therapy but slower than after subtotal thyroidectomy. There is no risk as imposed by anesthesia and operative intervention. No time and expense are lost through hospitalization. Local patients may continue on their jobs and out-of-town patients are detained only about two days. Remissions are comparable to those induced by subtotal thyroidectomy in diffuse toxic goiter and only somewhat less satisfactory in toxic nodular goiter.

SUMMARY

The accumulation and retention of radioiodine by the thyroid gland provides an indicator of the rate of production of thyroid hormone.

Radioiodine provides a vehicle for concentrated irradiation of hyperactive thyroid tissues.

Diffuse toxic goiter responds to irradiation more satisfactorily than toxic nodular goiter. Nontoxic nodular goiter should be resected because of its high incidence of carcinoma. Surgery offers more rapid remission of diffuse toxic goiter and more certain control of toxic nodular goiter.

Radioiodine in hyperthyroidism offers the advantages of final remissions comparable to those effected by surgery, with conservation of time, energy, and funds and avoidance of added anxiety, surgical risk, and hospitalization.

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UROLOGY AWARD OFFERED

The American Urological Association is offering its annual award of $1,000, with a first prize of $500, second prize $300, and third prize $200, for essays on the result of some clinical or laboratory research in urology. Competition will be limited to urologists who have been in specific practice for not more than five years and to men in training to become urologists. The first prize essay will appear on the program of the meeting of the association to be held May 21-24, 1951, in Chicago.

For full particulars interested physicians may write the secretary, Dr. Charles H. de T. Shivers, Boardwalk National Arcade Building, Atlantic City. Essays must be in his hands before February 10, 1951.

SOME ASPECTS OF THYROID DISEASE

V. Relationship of Thyroid to Sterility

ROBERT JAMES CROSSEN, M.D., St. Louis, Missouri

OUR knowledge of the importance of thyroid function in sterility is derived from three general sources: (1) Thyroid dysfunctions, such as cretinism, myxedema, and toxic goiter, are usually associated with menstrual disturbances and relative sterility. (2) Correction of the thyroid dysfunction frequently clears up the menstrual irregularities and sterility. (3) Experimental work on animals and in human beings has added to our knowledge. However, the modus operandi of thyroid-gonadal relationship is still not clearly understood.

THYROID DYSFUNCTION

There are many reports in the literature pointing out the fact that abnormal thyroid function is probably the most important endocrine factor in sterility. Rowe, in a series of 2,549 cases of thyroid dysfunction, had a 30 per cent incidence of sterility. Litzenberg found that 45 per cent of his patients in whom the basal metabolism rate was low were sterile. Hypothyroidism comprised 47.4 per cent of a group of sterility cases reported by Nicodemus and Ritmiller and 30.6 per cent of 212 cases studied by C. M. McLane. Hamblen stated that hypothyroidism is observed in from 20 to 25 per cent of the wives of the childless couples in his clinic.

The clinical evaluation of sterility patients suspected of having a hypothyroid condition requires a careful history, physical eaxmination, and laboratory tests. It is well known that the accuracy of a basal metabolism test depends upon the conditions under which it is done, the time within the menstrual cycle, and many other factors, yet many physicians still rely on the results of a single test taken at any time of the month. The test should be done half way between the menstrual periods and two tests should always be done. If these tests do not check within 5 points, further tests are indicated. The blood cholesterol level has been used as an index of thyroid deficiency with varying success. Wilkins and Fleishman have expressed the belief that the drop of the blood level of cholesterol following administration of thyroid extract is more important in diagnosing thyroid deficiency than is the initial blood level.

It is usually easy to pick out the hypothyroid cases. The characteristic symptoms are lack of energy, tiredness even in the morning, irritability and emotional instability, tendency to cry easily for no apparent reason, lack of luster in the hair which comes out easily on combing, cracked finger nails, constipation, and lack of libido. Usually the individual patient will have several of these symptoms. Physical findings are dry skin, cold extremities, and low blood pressure. Most physicians advise a trial of thyroid therapy even though no signs or symptoms are present and in spite of a normal metabolism test.

THYROID THERAPY

Winkelstein, in a series of 16 sterility cases in which no cause for the sterility was found, gave thyroid extract to tolerance regardless of the basal metabolism result. The patients were started on 1 grain of thyroid daily and the dose was increased ½ grain weekly until evident signs of intolerance were noted. Careful check of the pulse, weight, tremor, urinary sugar and albumen, and basal metabolic rate was kept. The basal rate was maintained between +10 and +20 per cent. In the 16 patients selected for the thyroid therapy 9 became pregnant and 7 of these carried the pregnancy to term. Five of the 9 patients who conceived had true clinical hypothyroidism and the remaining 4 had subclinical signs. In none of the patients who failed to conceive was there any demonstrable lack of thyroid.

Another factor which is important in relative sterility is the high instance of abortion which occurs in hypothyroid patients. This abortion is thought to be due to a gametopathic effect of the hypometabolism of the ovum. The result is the discharge of a blighted ovum with a sac containing no embryo. These facts emphasize the need of having the patient on thyroid before the pregnancy and continuing thyroid throughout the pregnancy.

Brown and Bradbury reported 4 cases of sterility associated with hypothyroidism. Oral administration of thyroid even in large doses failed to correct the hypothyroidism or the sterility. All 4 of the cases responded to parenteral administration of thyroxin either intravenously or intramuscularly. Two of the patients became pregnant, one within a month and the other within three months after starting the parenteral thyroxin, and both carried to term.

PHYSIOLOGIC EFFECT OF THYROID

The exact mechanism by which the thyroid gland affects pelvic function is not clearly understood. There are no changes in the endometrial patterns in the hypothyroid patient nor does the administration of thyroid extract affect this pattern. Some believe that

Read at a General Meeting, State Medical Association of Texas, Annual Session, Fort Worth, May 3, 1950.

the gonads are affected by hypometabolism and that the diminished oxygen intake causes them to produce abnormal gametes. Others think that the lowering of the general metabolism retards all physiologic processes including ovarian and pituitary function.

In a recent study, Gassner, Barrett, and Gustavason reviewed the literature on the thyroid-gonad relationship and the part played by the pituitary gland in this relationship. The research described in the following paragraphs is a summary of their review.

The effect of the thyroid gland on the ovary has been demonstrated in various ways. Thyroidectomy in the immature rat caused no change in the structure or number of follicles present in the ovary. In the mature rat a long diestrum followed thyroid ablation but small doses of thyroid extract restored the estrous cycle. Feeding thyroid to intact animals resulted in a protracted diestrum with corpus lutea of unusual size. Wichert and Boyd believed that the extra intake of thyroid caused a greater production of the luteinizing hormone or that the estrogen level was lowered by the increased metabolism, thus accounting for the excess development of the corpora lutea. When large amounts of thyroid were fed to pregnant rats, gestation was prolonged and death often followed. Feeding of small amounts of thyroid to immature rats was found by daCosta and Carlson to accelerate sexual maturity, whereas large doses delayed the onset of the opening of the vagina and sexual maturity. Reiss and Pereny showed that the feeding of thyroid extract to castrated female rats inhibited the restorative effect of injected estrogen, VanHorn found that the amount of estrogen needed to bring the vaginal changes to normal was trebled if the castrates were fed on thyroid. This apparent inhibition between thyroid and estrogen is attributed by VanHorn to the more rapid elimination of estrogen due to the increased metabolism.

The effect of the ovarian hormone on the thyroid gland has been extensively investigated. Changes which occur in the thyroid gland after castration are evidenced by a lowered follicular epithelium and an increased colloid storage. There is an initial hyperplasia and hyperactivity during the first two weeks, but eventually a state of hypoactivity results. Pincus has shown that large doses of estrogens or prolonged treatment definitely depresses the thyroid function while small doses for a short time increase the weight of the thyroid gland and the basal metabolism rate.

The relationship between the thyroid and the pituitary glands has been explored from several angles. Thyroidectomy in rats was found by Holweg and Junckmann to cause a marked decrease in the acidophils in the pituitary gland and a vacuolation of the basophils similar to that which follows castration. Administration of thyroid extract or thyroxine restored the acidophils to normal. Nelson and Hickman and Severinghaus discovered that the administration of estrogen caused a repair or elimination of the vacuolated basophils but it did not restore the acidophils. The evidence indicates that these "thyroidectomy cells" in the pituitary gland are not only basophils but modified basophils alike in characteristics to a castration cell. In the rhesus monkey modification of the basophils occurs after thyroidectomy but the changes are relatively few as compared to those in the rat.

Gessler, investigating the role of the pituitary gland in the thyroid-gonadal relationship, found that folliculin injected into intact animals lowered the basal metabolic rate but failed to lower the rate in hypophysectomized rats. He also showed that the thyrotrophic hormone could be antagonized by simultaneous injection of folliculin in the intact or the hypophysectomized rat. He concluded that there was a direct action of estrogen on the pituitary gland, causing a lowered production of thyrotrophic hormone and therefore a depressed thyroid function.

That the modus operandi of thyroid administration in sterility is still vague is evident. In answer to a question as to the hormone mechanism involved in the relief of sterility by thyroid administration, Dr. Gassner gave the following reply: "There exists probably a hypothyroid state in such individuals; additional thyroid increases their metabolism, especially the metabolism of the ovaries. Since there usually is an apparently normal cycle followed by a normal ovulation, it is likely that the thyroid increases the livability of the ovum both before and after the fertilization and facilitates nidation."

SUMMARY

From the evidence presented from clinical studies of sterility it is clear that thyroid is one of the most effective hormones in the treatment of the sterile couple. The mechanism of its action in correcting sterility is not clear.

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Among the ten Army hospitals now caring for patients evacuated from the Far East Command are William Beaumont Army Hospital, El Paso, and Brooke Army Hospital, San Antonio. Four additional Army hospitals are soon to receive Korean patients and some Army patients are now being cared for in Navy hospitals.

Dr. Cary Poindexter, Crystal City, was installed as president of the Private Hospital and Clinic Association at its meeting in Austin, September 23 and 24. Other officers are Drs. Harvey Renger, Hallettsville, president-elect; Dr. S. D. Coleman, Navasota, vice-president; and Dr. Neil Buie, Marlin, secretary and treasurer.

SOME ASPECTS OF THYROID DISEASE

VI. Prevention of Endemic Thyroid Disease

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IT has long been recognized that in certain areas of every continent there is a relatively high incidence of goiter, myxedema, and cretinism. In certain of these areas simple goiter was observed in a high proportion of the population. In the United States the areas of highest incidence of simple goiter have been observed along the St. Lawrence River, around the Great Lakes, and in the Rocky Mountain region. In Europe a high incidence of simple goiter has been observed in mountainous regions, particularly in the Carpathians, the Pyrenees, and the Alps. The highest reported incidence was from the Swiss Alps; not only was simple goiter extremely frequent, but cretinism has been reported with great frequency.

Early in the nineteenth century it was recognized that in the areas in which endemic goiter was most prevalent there was a corresponding deficiency in iodine. In general, iodine deficiency increases with increasing distance from the seashore, but it is also related to surface geology. Iodine is a relatively rare element, occurring in most geologic formations only as traces. Soil produced by weathering of rock usually contains more iodine than the rock from which it was produced because of the capacity of many plants to concentrate the element. Surface waters generally contain iodine in proportion to that of the soil of the area. Analysis of the soil and of surface drinking waters uniformly have shown low iodine content in endemic goiter areas. It has been shown repeatedly that plant growth may be inhibited by extreme iodine deficiencies in the soil and that iodine fertilization not only increases the iodine content of the plant, but within limits, stimulates growth. The iodine content of fresh water plants is consistently low as compared with plant life in the sea, extremely high iodine content being characteristic of sea weeds and sea plants. Animal foods contain widely varying amounts of iodine, depending upon the availability of iodine in the area. Fresh water fish contain small amounts of iodine, whereas salt water fish invariably contain much larger quantities.

Innumerable surveys have been made in the United States to determine the frequency of endemic goiter, particularly in school children. These surveys in general have confirmed previous observations as to endemic goiter areas, the greatest prevalence being found in the Great Lakes area, where as high as 80 per cent of school children were found to have simple goiter, in western New York state, Ohio, Indiana, and Michigan. These surveys, however, showed wide variation in prevalence within relatively short distances, possibly associated with the use of either surface or deep well sources of drinking water. The draft board examinations during World War I provided the first nationwide measure of the frequency of simple goiter among young adult males. These examinations showed a high frequency of simple goiter in the mountain states and in the Great Lakes region, varying from a high of approximately 27 per 1,000 for the known goiterous regions to a low of .25 per 1,000 in the southern or seaboard areas. It should be pointed out that a diagnosis of simple goiter was made only if there was gross enlargement of the thyroid gland, and the true prevalence of goiter in the group observed was unquestionably much higher.

The medical literature contains a constantly increasing volume of evidence that endemic goiter occurs throughout the world. It has been recognized on all continents and in all major islands, usually associated with mountainous areas and increasing distance from the sea, and wherever tested, it has been shown to be associated with iodine deficiencies in the diet and in the water supply.

GOITER PROPHYLAXIS

With the general acceptance of the theory that endemic or simple goiter is due to a deficiency of iodine in the diet, prophylaxis and treatment by the addition of the appropriate amounts of absorbable iodine was logical. As is frequently the case, domestic animals benefited from new knowledge in the field of medicine before the human being. In the middle west, iodized salt has been used for stock feeding almost universally for many years. An increase in milk production and in butter fat content has been reported following the introduction of iodized salt. In endemic goiter areas, a hairless condition was noted in pigs and stillbirth was frequent until iodized salt was provided. Goiter has been a frequent complication in fish hatcheries and is readily controlled by the addition of small amounts of sodium iodide to the water.

Goiter prophylaxis in human beings has been practiced rather haphazardly in various parts of the world for more than a hundred years. Children in Norway were fed sea fish as a prophylaxis long before the relationship between iodine deficiency and simple goiter was established. The use of iodized salt has been encouraged or prohibited in various parts of the world, depending upon current medical opinion. More than thirty years ago, the American Medical Association

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sponsored a study in Akron, Ohio, in which school children were divided into two groups. One group was given 2 Gm. of sodium iodide in broken doses twice a year. A similar group was used as controls. Of the 2,190 school girls who were given the prophylactic dose of sodium iodide, only 5 developed goiter during the period of observation, whereas among 3,205 who did not take the prophylaxis, 495 developed goiter. This clear-cut evidence of the value of sodium iodide prophylaxis by periodic doses of sodium iodide is believed to have served as a stimulus to the use of iodized salt, but the use of treated salt was never put into general use in the United States. This method, however, has been used extensively in some other countries, particularly in Switzerland. The amount of iodine added to salt varies greatly in different countries: in the United States, 1 to 5,000 has been the standard ratio established; in Canada, 1 to 10,000; and in Switzerland, 1 to 200,000.

Although the use of iodized salt in the United States has been purely optional, it has been the most common method of prophylaxis. In Detroit school cafeterias used nothing but iodized salt in feeding some 50,000 children for a period of five years. During this time there was no evidence of any ill effects, and incidence of goiter dropped from 46 to 12 per cent within the period. During the same period similar surveys made in Cleveland, where iodized salt was not used, revealed only a drop from 34 to 30 per cent.

The addition of iodine to the drinking water supply also has been used in a number of different places, particularly in cities of the Great Lakes region. In those communities where this method has been used, there apparently have been no serious side effects, and the prevalence of goiter has been reduced, presumably as a result of the increased ingestion of iodine.

Another factor in the reduction in the prevalence of endemic goiter that should not be overlooked is the improvement in the general diet of the country. Improved methods of transportation have resulted in the shipment of vegetables from iodine rich areas into the iodine poor areas, thus increasing the quantity of iodine available. Improvement in refrigeration methods have also made it possible to ship sea food farther and farther inland with safety. This, too, has brought a new source of iodine to the populations of otherwise iodine poor areas. All of this is encouraging, and yet endemic goiter still exists. It is one of the most preventable of all diseases of mankind, and there seems no good reason why it should not be quickly eradicated from this country.

A bill introduced into the Eightieth Congress would have required that all table salt, except kosher salt and salt for medical and surgical purposes, contain a specified amount of iodine sufficient to prevent endemic goiter. This bill received sufficient opposition from the salt producers' associations, food manufacturers, and a few physicians that it was not reported out by the committee. The opposition claimed that it was unconstitutional in that it would have forced medication upon persons who did not necessarily desire medication. It was also claimed that the addition of even a minute quantity of sodium iodide to foods might adversely affect sales as a result of change in taste, a claim also completely unsubstantiated. A group of dermatologists in their individual capacities, unsupported by their official associations, opposed the bill on the grounds that it might produce irritation to patients with certain skin diseases, particularly those with acne vulgaris.

Within the year, the fallacy of the claims of the food processors has been proved beyond a reasonable doubt at a reputable university. Almost unanimous medical opinion has been expressed in favor of the addition of iodine to table salt. In the meantime, the salt producers' association and representatives of the American Medical Association, the Food and Drug Administration, and the United States Public Health Service have reached an agreement to attempt an educational campaign to stimulate the more general use of iodized salt. Educational material has been prepared by the Committee on Endemic Goiter of the American Public Health Association, and the retail and wholesale grocerymen's associations have agreed to put the full weight of their influence behind the educational campaign. It is generally agreed that it would be desirable to obtain the desired end by this democratic process rather than by resorting to legislation. However, the importance of endemic goiter in the United States is such that if this educational campaign is not shown soon to be reasonably effective, legislation should be adopted.

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Dystrophy Foundation Organized

Initial steps were taken in the formation of the first chapter of the recently chartered National Muscular Dystrophy Research Foundation, Inc., September 7 in Port Arthur, reports the Beaumont *Enterprise*. Approximately forty persons heard Dr. William Fields, associate professor of neurology at Baylor University College of Medicine, Houston, explain how such a chapter could aid research in muscular dystrophy. Dr. Fields is a member of the board of directors of the foundation.

CARCINOMA OF THE THYROID GLAND

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Galveston, Texas

APPARENTLY there is confusion among some physicians concerning carcinoma of the thyroid gland. The main misunderstanding has been that large suspected carcinomas of the gland have been considered hopeless and no treatment has been offered or at best a feeble palliative type of radiation therapy has been given when in reality the outlook for the patient may be good.

With this observation as a stimulus we have reviewed the cases of carcinoma of the thyroid at the John Sealy Hospital together with some of the more recent literature on this subject.

INCIDENCE

Carcinoma of the thyroid gland is relatively uncommon outside the goiter belt. The incidence of cancer in goiter ranges from 1.88 to 4.6 per cent.[11, 13, 17] At the John Sealy Hospital we had 28 carcinomas in 193,930 admissions and in 509 thyroidectomies (5.5 per cent) during the 1920-1950 period.

Carcinoma of the thyroid gland is more common in women than in men, our ratio being 20 to 8. Ward[18] reported two-thirds of the cases of carcinoma of the thyroid in the 40 to 70 year age group with less than one-fifth in the group younger than 40 years. In our series the average age was 40 with extremes from 12 to 72 years. The papillary tumors are found chiefly in young people, the majority of patients being less than 35 years of age.

CLINICAL MANIFESTATIONS

The first and chief complaint in thyroid carcinoma is thyroid enlargement. Twelve of our patients had preexisting goiters, the average duration of which was 9.7 years. The average duration of rapid growth of the goiters in this group before they came to our attention was 19.5 months. The classical symptoms of fixation, hoarseness, and hardness usually mean that the diagnosis has been made too late and that little can be done for the patient. Grimes[6] has pointed out that hemoptysis in the presence of a goiter may mean that carcinoma is present and has invaded the trachea. Calcification in the gland does not rule out malignancy. Fixation and hardness may be misleading, as chronic thyroiditis or Riedel's struma may often be mistaken for carcinoma, the final diagnosis being made only by microscopic examination. Weight loss is seen only late in the disease.

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Read before the Section on Surgery, State Medical Association of Texas, Annual Session, Fort Worth, May 2, 1950.

Hyperthyroidism, formerly thought to be rare in carcinoma, is probably from overactivity of thyroid tissue around the tumor rather than from the tumor cells. Our series exhibited 6 toxic cases out of 28. The toxicity though mild seemed to be definite, cases with elevated basal metabolic rate caused by tracheal obstruction and so forth being eliminated. One patient had an exophthalmos. Lange and Maclean[10] likewise had a high incidence of toxicity in their series as have other recent authors.[16] Hypothyroidism is generally thought to be nonexistent in carcinoma cases, but McSwain[11] reported one instance.

PATHOLOGIC MANIFESTATIONS

There have been many classifications of carcinoma of the thyroid gland. There are tumors of relatively low malignancy consisting of papillary adenocarcinoma and carcinoma confined to an adenoma which has undergone malignant change. The papillary tumor is characterized by slow growth and little invasive tendency, and its metastases are usually limited to the cervical region and the superior mediastinum. Bloodborne or distal metastases are rare. The primary lesion, as demonstrated by Wozencraft,[20] Warren,[19] and others, may be difficult to find. Nearly all of the so-called "lateral aberrant thyroids" probably fall into this group representing cervical metastases from a hidden focus in the gland. Papillary adenocarcinoma usually occurs in young people and the clinical course may run over a period of years even without treatment. About one-third of the tumors in most series of cases of carcinoma of the thyroid gland are in this group.

Another third consisting of carcinoma confined to an adenoma has a favorable prognosis if detected early. It is this type which often is found by the pathologist when the surgeon has been unable to make such a diagnosis. There may be many cell patterns. The diagnosis of malignancy in some of these may be questionable.

The remaining third of thyroid carcinomas consists of diffuse adenocarcinomas which are highly malignant and usually rapidly fatal with invasion and metastasis. The alveolar or small-cell carcinoma and the giant-cell carcinoma, though small in number, are the most dangerous. Alveolar adenocarcinoma and acinar adenocarcinoma are somewhat less malignant and form most of this group. Rare squamous-cell carcinoma and sarcomas are highly malignant.

Carcinoma of the thyroid gland, like several other carcinomas, is notorious for bone metastasis.

At the John Sealy Hospital (1920-1950) there

have been 13 papillary adenocarcinomas, 13 adenocarcinomas, 1 Hürthle cell carcinoma, and 1 giant-cell carcinoma. There was local extension beyond the capsule of the gland in only 3 cases, none of them papillary. There were 11 cases with cervical metastases, 5 with mediastinal, 4 with pulmonary, 1 with bone, and 1 with liver metastases. The papillary adenocarcinoma group had metastases limited to the cervical region exclusively with the exception of 2 cases in which there were pulmonary metastases.

TREATMENT

Since as high as 90 per cent of carcinomas of the thyroid gland arise in preexisting adenomas[9] and since as high as 24.4 per cent of nontoxic solitary adenomas of the gland have been found to be malignant,[2] many surgeons consider a nontoxic solitary adenoma potentially precancerous. It is impossible to say that an early malignant process is not present in such a lesion. While the nontoxic multinodular gland has a lower incidence of neoplastic change, we agree with Cole[2] and most others that these likewise should be removed. There is the danger of toxicity or of tracheal obstruction as well as that of carcinoma.

Ward[17] has mentioned that preexisting goiter as a source of carcinoma may have been overemphasized. Crile[4] has expressed the opinion that even solitary adenomas should not be removed except in children (in whom the incidence of carcinoma is at least 19 per cent) or when there is some evidence of neoplastic change. Cole and others have taken exception to these views. One of the arguments used against prophylactic removal has been the low incidence of carcinoma in autopsy material. Anglem[1] has shown statistically the fallacy in this type of reasoning as most patients with carcinoma of the thyroid who die of the disease do not reach the pathologist. Of 11 of his patients known to have died of the disease, only 1 came to autopsy.

Where the carcinoma has been discovered only by the pathologist on examining microscopic sections of the gland after the operation has been completed, the unsuspecting surgeon has the embarrassing problem of deciding whether a further operative procedure is to be done. If there is any question as to adequacy of the local excision of the tumor, certainly more extensive removal is indicated. Ward[18] and others advocate subtotal lobectomy rather than enucleation of large solitary adenomas to avoid this difficulty. Few writers advocate neck gland dissection or complete thyroidectomy when the lesion appears to be confined to an adenoma and there are no evidences of local or regional spread.

In more extensive lesions many physicians such as Cole[2] and Lahey[9] recommend hemithyroidectomy and block dissection of the neck on the involved side. Midline lesions should probably have a total thyroidectomy. Troell[13] in 42 cases found the postoperative course the same in both radical and less extensive resection and recommended less radical surgery. Where the tumor is large, hard, and fixed, most authors agree that surgery other than for biopsy is useless. In some cases tracheotomy or excision of part of the gland for decompression of the trachea may be indicated. Here roentgen-ray may be given, but it is rarely helpful.

It is important, however, that this type of case not be confused with the papillary type of carcinoma, in which the lesion may be large with huge cervical metastases, but the tumor is soft to firm and not frozen. There is usually a history of the large masses being present for some time, and in most cases there is no evidence of local invasion or distal metastasis. In many cases the thyroid appears normal with cervical lymph gland metastases the only evidence of the disease. These lesions are usually well encapsulated and can be enucleated without difficulty. Where bilateral cervical metastases are present, a total thyroidectomy must be done. While many advocate a unilateral lobectomy where there appears to be involvement on only one side, we have seen sufficient bilateral involvement in these cases to prefer a total thyroidectomy even if no lateral metastases or lobe involvement is seen on the side opposite the lesion. Jackson[7] does a subtotal thyroidectomy on the opposite side.

The primary lesion, as has been pointed out, may be hidden.[20] If examination of a neck mass shows thyroid tissue, this should not be considered a benign aberrant thyroid but treated as a papillary carcinoma metastasis from a primary lesion somewhere in the gland.

While Lahey[9] has advocated a radical neck dissection on the involved side in papillary lesions, Crile[3] has expressed the belief that removal of the gross tumor masses is sufficient. Where a bilateral block neck dissection is attempted, one internal jugular vein should be preserved. If necessary, the other internal jugular vein can be removed at another operation several weeks later.

The incidence of recurrence in Lahey's and Crile's series is about the same (16.6 and 14.1 per cent respectively). If local cervical recurrence occurs, these masses should be removed. In the literature are found many cases in which recurrent lesions have been removed with apparent cure, and others in which the patient has been carried on for years with repeated removal of recurrent neck nodules.

Where isolated bony metastases are present and the primary lesion in the thyroid is small and resectable, Outerbridge[12] recommended that both be excised. In the so-called "benign metastasizing adenoma" group the primary lesion is usually small and well encapsulated with a slow growth and may be unknown until

the bone lesion is subjected to biopsy. If the primary lesion is not removed, further metastasis probably will occur.

Radiation therapy is generally recommended as an adjunct to surgery or where excision is impossible or incomplete. Unfortunately most of the inoperable cases seem little benefited by roentgen ray. The papillary adenocarcinoma lesions are usually sensitive to radiation, and most writers recommend it in conjunction with surgery. We would like to recommend again that these masses be enucleated first, no matter how extensive they are. Even if the tumor is radiosensitive, with the zeal the surgeon uses in attacking extensive lesions is probably the most important factor.

Such lesions as the papillary tumors, which occur more commonly in younger people and can be enucleated easily, naturally have a low operative mortality. This group has by far the best prognosis and, together with the Hürthle cell carcinoma and the malignant adenoma, probably should be considered separately in evaluating carcinoma of the thyroid, for the prognosis in the other groups is not nearly so good. As Ward[13] has pointed out, the time of diagnosis in relation to the duration of the condition, the pathologic pattern, and the presence of metastases are the important factors in the prognosis. The easier the physician can

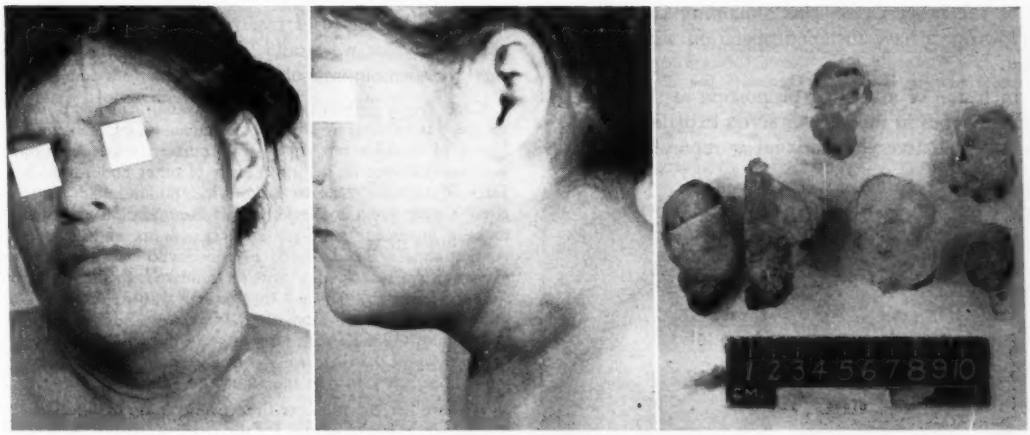

FIG. 1. Case 1. Papillary adenocarcinoma of the thyroid gland with extensive cervical metastases. The photographs of the patient were taken after a first stage operation in which the primary lesion and most of the metastases were removed. The rest of the tumor was removed at a later operation. The procedure was done in two stages because bilateral sacrifice of the internal jugular veins was necessary. The tumor tissue removed at the first operation is shown at the right. Note that it was well encapsulated.

much time will be saved and the patient will be spared the discomfort of the sloughing of these large masses. Crile has found roentgen ray disappointing in his cases.[3] Our experience has been the same.

Radioactive iodine, which seemed to offer so much promise in carcinoma of the thyroid, has been disappointing. In those cases in which it is most needed, the more anaplastic types, the material is often not absorbed. The place of radioactive iodine in the therapy of carcinoma of the thyroid gland is still not settled; while it may be helpful, it has not supplanted surgery or the older methods of irradiation.[5, 8, 14]

PROGNOSIS

The operative mortality in thyroidectomy for carcinoma of the thyroid is about .02 per cent. The mortality will vary depending upon the percentage of radical neck dissections, according to Cole,[2] but most of these patients do well; Cole had no operative deaths in his series of neck gland dissections. The age and general physical condition of the patient together make the diagnosis of carcinoma, the worse the outlook.

In McSwain and Diveley's[11] series the duration of the mass in the neck had no bearing on the prognosis. Distant metastases including bony ones may exist for years without much evidence of activity. In fact, so-called "benign metastasizing adenoma" got its name because of the apparent slowness of its course.

Crile[3] reported 21 cases of papillary carcinoma which were followed from five to twenty-one years, and only 3 of the patients died from cancer. These lived nine, fifteen, and nineteen years after the original thyroidectomy. It can be seen that a "five year cure" in this type of lesion had no significance. One patient had lived for twenty-one years after diagnosis with no treatment. Jackson[7] reported a case of recurrence twenty-four years after thyroidectomy.

None of our 13 patients has died of carcinoma though the follow-up is incomplete in some and others have been treated too recently to evaluate. One died postoperatively of cardiac failure and one died thirteen

years later of carcinoma of the rectum without evidence of recurrence. Of those still alive at the time of the last check-up, one had lived nine years since operation; others six, five, four, and three years without evidence of recurrence. One patient who had an enucleation of an adenoma in which the diagnosis of papillary adenocarcinoma was made had a recurrence of the lesion with large cervical gland metastases four years later. A total thyroidectomy with enucleation of the glands was done, and the patient has shown no evidence of recurring carcinoma after two and one-half years. Preoperative radiation was given in 1 case without any response. Postoperative radiation was given in 3 of the other cases. The remaining cases have no follow-up or have included operation within the past year.

Inclusion of a varying proportion of these less malignant types in the various series explains in part the variation in five year survival as reported by various

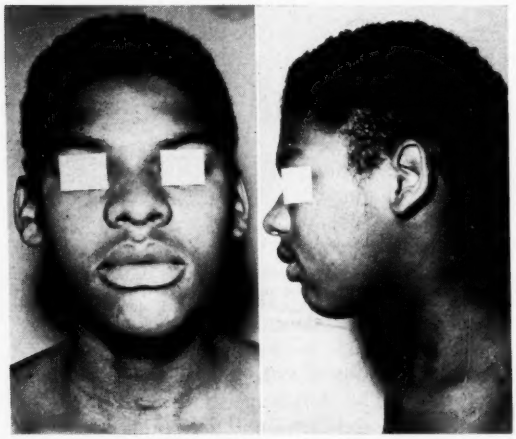

FIG. 2. Case 2. Papillary adenocarcinoma of the thyroid gland. Photographs of the patient were taken one and one-half years after operation for removal of recurrent tumor.

authors. Extremes of 7.8 and 61 per cent have been reported. The geographic region covered by the report and the difference in criteria as to definition of malignancy also are factors accounting for the discrepancy.

In contrast, the prognosis in the more malignant types of thyroid carcinoma is poor.

Among our cases of adenocarcinoma, 1 patient was alive without recurrences six years postoperatively, and 1 two years postoperatively. One patient had been alive three years but had local recurrences. None of these had shown invasion or metastasis originally. Two patients, likewise without invasion or metastasis, had died with metastasis five and six years respectively after surgery and postoperative irradiation. One patient with invasion and metastasis treated by irradiation alone died within one month. We have no adequate follow-up on the other cases or they have been treated within one year and are too recent to evaluate.

One patient with Hürthle cell carcinoma without invasion or metastasis was operated upon fourteen months ago and has no recurrences at present. No postoperative roentgen-ray therapy was given.

In the small-cell carcinoma or the giant-cell carcinoma the results may be unsatisfactory even when treatment is early. Our patient with giant-cell carcinoma died four months after surgery and irradiation with local invasion and metastasis.

CASE REPORTS

The following brief case reports illustrate a few of the points that we would like to emphasize in papillary adenocarcinoma of the thyroid.

CASE 1.—A 43 year old Mexican woman had had a nodule in the left cervical region for seventeen years. This nodule began to increase rapidly in size fourteen years after onset and was followed by the appearance of other nodules on both sides of the neck. One of the cervical nodules had been excised a year later and microscopic examination revealed it to be a metastatic papillary adenocarcinoma of the thyroid. At that time it was believed by those who saw her that the extensive spread of this growth rendered further surgical treatment inadvisable, and the patient was treated with irradiation therapy. A total of 2,200 r were administered to each side of the neck with no change in the size of the tumor. It was thought that the case was hopeless, and the husband of the patient was told that she would be dead within a year.

We saw her for the first time twenty months later in apparently good health except for the cervical masses, the largest of which measured 15 cm. in diameter. Roentgenograms of the bones and chest were negative. Because of the type of tumor, its discrete, well-encapsulated nature, the long history, the poor response to irradiation, the lack of invasive tendencies, and absence of distal metastases, it was thought that surgical removal should be done if only for palliation. The isthmus and an adenoma measuring 2 cm. in diameter were removed. Since both lobes of the thyroid were extremely atrophic and apparently free of tumor they were allowed to remain. The cervical masses were enucleated, it being necessary to sacrifice the internal jugular vein on the right. One mass was left in the lower left side of the neck because it would have meant sacrificing the other internal jugular vein at the same time; this was removed at another operation two months later.

Pathologic examination again confirmed the diagnosis of papillary adenocarcinoma. The tumor has not reappeared in the year which has elapsed since the last operation.

CASE 2.—A 17 year old Negro boy had had an adenoma of the right lobe of the thyroid gland removed four and one-half years previously; the tumor was shown microscopically to be a papillary adenocarcinoma. We first saw him when he was admitted to the John Sealy Hospital in July, 1948, for a recurrence of six months' duration. He had had symptoms of mild hyperthyroidism. Physical examination at this time revealed a soft, nontender, discrete mass measuring 5 cm. in its greatest dimension located just above the right clavicle. Roentgen-ray examination showed no evidence of mediastinal pulmonary or bony metastases. The basal metabolic rate was —25 per cent. The patient had been seen by a number of physicians, all of whom thought roentgen radiation was the

only treatment that could be offered and it only with a poor prognosis.

On July 20 under a general anesthetic the mass in the right supraclavicular region was easily enucleated. It had much the same appearance as normal thyroid tissue. Other well-encapsulated masses in both right and left anterior cervical regions were easily removed. All were found to be papillary adenocarcinoma. A total thyroidectomy was done, as both lobes contained carcinoma. The patient was discharged from the hospital on the fifth postoperative day and received 3,125 r to each side of the neck as an out-patient. To date (more than two years later) he has had no evidence of local, chest, or skeletal recurrences. He is asymptomatic and is being given 1 grain of thyroid three times daily. His basal metabolic rate when last measured was —26 per cent.

Because of the extensiveness of the lesions and the histology of the tumor a radical neck dissection was not done. Gross removal of the lesion made radiation therapy much simpler and the patient more comfortable, even if excision was not a treatment in itself. As was illustrated in case 1, some of these lesions are not sensitive to roentgen ray.

SUMMARY

In the last thirty years there have been 28 carcinomas of the thyroid gland at the John Sealy Hospital with an incidence of 5.5 per cent in all thyroidectomies done here. Twenty cases were in women, 8 in men. The average age was 40 years with a range of from 12 to 72 years. The main and most constant finding was thyroid enlargement. Twelve of our patients had a preexisting goiter, the average duration of which was 9.7 years with 19.5 months of rapid growth before coming to the hospital. Our group of cases had a much higher incidence of toxicity than is found in most series (21.43 per cent).

The papillary adenocarcinoma group occurring in almost one-half of our cases form a distinct clinical entity. It is characterized by slow growth, little invasive tendency, and metastasis usually limited to the cervical region and superior mediastinum. The so-called lateral aberrant thyroid usually falls in this group as a metastasis from an occult primary lesion in the gland proper. These cases of papillary adenocarcinoma must not be passed over as hopeless although extensive cervical metastases may be present. These metastases may be enucleated and the primary lesion removed with a good prognosis in most cases. Recurrences should be handled in the same fashion. Although many of these lesions will respond to roentgen-ray therapy, some will not. In any case radiation is made easier by previous surgery.

In contrast, the other types of carcinoma have a poor prognosis unless picked up at the stage in which the lesion is confined to an adenoma. Here surgery is again indicated except in advanced lesions in which fixation and invasion is present.

Radiation may be given postoperatively especially where the completeness of the removal is in doubt. Radioactive iodine, still in the experimental stage, has been disappointing in the treatment of most carcinomas of the thyroid.

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ABSTRACT OF DISCUSSION

DR. ROBERT M. MOORE, Galveston: The American Goiter Association has adopted a clinico-pathologic classification of thyroid malignancies suggested by Shields Warren and based upon ideas presented many years ago by Allen Graham. In this classification thyroid tumors are divided into three groups. Group 1 comprises the types which are of low grade malignancy, especially the adenoma just showing blood vessel invasion and the papillary cystadenoma. Group 2 includes the tumors of moderate grade malignancy, the papillary adenocarcinoma, the alveolar adenocarcinoma, and the Hürthle cell carcinoma. Group 3 comprises the highly malignant tumors, which sometimes are so bizarre histologically that it is difficult to assign a name. In fact there is often great variation in the histologic pattern in different parts of the same tumor and from microscopic field to microscopic field.

There seems every reason to believe that most thyroid malignancies take origin in a preexisting fetal adenoma. Although the group 3 cases can seldom be controlled by any form of treatment, fortunately the majority of thyroid tumors fall into groups 1 and 2. They grow slowly, and as long as the disease is confined to the thyroid gland and to the lymph nodes of the neck, radical surgical extirpation is followed by nonrecurrence in a sizable proportion of cases and by much

later recurrence in many others. Thus, ten and fifteen year cures are not uncommon.

As Dr. Singleton and Dr. McNeill pointed out, the development in the knowledge of thyroid tumors permits several important applications. In attempting to simplify, I should judge that there are at least three conclusions of primary clinical importance:

1. Patients should never be denied surgical exploration because of the duration or the size or the multiplicity of neck tumors, for the condition may be low grade microscopically, and, particularly if the growths are of papillary nature, complete extirpation with thyroidectomy may still give many years of normal life.

2. There has been an almost complete reversal of opinion regarding papillary thyroid tumors encountered laterally in the neck. The present consensus is that these are rarely if ever aberrant thyroid glands of embryologic origin. The great proportion are lymph node metastases from a primary tumor in the ipsilateral thyroid lobe. It is agreed that excision of the lateral lesion should be accompanied by removal of the thyroid lobe on that side (along with the isthmus). The lobe will be found to contain the primary lesion, sometimes large but sometimes exceedingly small. There is still some difference of opinion relative to the necessity for extensive neck dissection or for the excision of the opposite thyroid lobe.

3. The proportion of adenomas which undergo malignant change varies in reports from different geographic areas. Certainly any adenoma may have already entered a malignant stage insofar as the physician can tell from external examination. Routine excision of the thyroid adenoma will cure many cases of incipient thyroid cancer. Moreover, many are beginning to believe that too much weight has been given to the word "solitary" in casting suspicion on the adenoma, since exactly the same malignant change may occur in the presence of multiple adenomas or adenomatous goiter.

NEEDLE BIOPSY OF THE LIVER

A Critical Appraisal

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CONSIDERABLE progress has been made in the understanding of diseases of the liver since the turn of the century. A significant part of this resulted from the introduction of needle biopsy of the liver, which for practical purposes may be considered to have been initiated by Iverson and Roholm[3] in 1939. The liver is an organ well suited to needle biopsy because the functional and anatomic unit, the lobule, measures approximately 1.5 by 3 or 4 mm. The biopsy needle usually secures parts of four or five different lobules, and the majority of diseases of the liver produce diffuse pathologic changes.

Our interest in the subject was stimulated by the current inadequacies in the diagnosis of diseases of the liver. Our investigation was started in January, 1949, subsequent to which time we have performed 136 biopsies on 82 patients. The diagnoses as rendered on the biopsy material were distributed as shown in table 1.

INDICATIONS

Indications for needle biopsy of the liver are as follows: (1) unexplained hepatomegaly, (2) jaundice of unknown etiology, (3) primary or secondary malignant disease affecting the liver, (4) obscure systemic diseases accompanied by pathologic changes in the liver, (5) for evaluation of therapy, (6) as a prognostic aid in liver disease, and (7) as a research tool.

Contraindications for the procedure are as follows: (1) hemorrhagic disorders, including decreased prothrombin activity; (2) lack of cooperation from the patient when the transpleural approach is used; (3) pleural and/or parenchymal lung disease when the transpleural route is employed; and (4) ascites (relative contraindication).

It is stated in the literature that decrease in prothrombin activity is a contraindication to needle biopsy of the liver. The prothrombin activity was determined in each of our patients before a biopsy specimen was taken. In 20 cases the prothrombin activity was less than 60 per cent of normal and of these 15 were less than 50 per cent. In none was bleeding encountered.

TABLE 1.—*Diagnoses on 136 Biopsy Specimens from 82 Patients.*

Portal cirrhosis	36
Viral hepatitis	30
Nonspecific hepatitis	17
Normal liver	17
Malignant neoplasms	11
Chronic passive congestion	9
Obstructive jaundice	7
Fatty metamorphosis	4
Biliary cirrhosis	3
Sickle cell anemia	2

COMPLICATIONS

There were no deaths in 82 patients upon whom 136 biopsies were done. The only alarming reaction was an acute abdominal disorder in a 33 year old

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Negro woman after transpleural biopsy, which was controlled with transfusion and general, nonspecific, supportive measures. Thereafter the patient recovered uneventfully from the disease and biopsy.

In two instances bile was noted to flow freely from the needle after the cannula had been removed; however, no signs of peritonitis or other disorder developed, nor had the gallbladder been damaged. Both patients had obstructive jaundice, and subsequent exploratory laparotomy revealed no untoward results from the needle biopsy. In another instance a large nodular tumor of the liver was inadvertently shown to be a huge amebic abscess.

Terry[15] in a modern series of liver biopsies reported 7 deaths in 2,469 biopsies, or a mortality rate of 0.28 per cent, occurring in patients with hopeless prognoses; the deaths in every instance were due to hemorrhage. Two were the result of the puncture of a large blood vessel.

It is unequivocally true that liver biopsy involves a small although definite risk, regardless of the method of approach or the biopsy needle used. However, the danger of needle biopsy is considerably less than that in taking a biopsy specimen during laparotomy under general anesthesia. In 2 recent cases in our hospital, death has followed surgical exploration of the common bile duct when the patients were suffering from advanced degrees of parenchymal liver damage, which was not apparent after extensive laboratory studies of the liver functions. Several authors[4, 18] have commented that patients with severe liver damage are poor surgical risks. Iverson and others[1] studied 1,100 cases of liver disease observed in a medical service; among 11 patients with parenchymal jaundice on whom a diagnosis was not made prior to surgery, 4 died after operation.

A moderate amount of pain occasionally follows needle biopsy of the liver, being most intense when the pleural spaces are crossed. Some patients complain of moderate pain in the midepigastrium, especially when the transpleural approach is used. The pain is mild, usually lasts no longer than a few minutes, and is controlled by Demerol hydrochloride routinely used. Often the procedure is painless. No difficulty was encountered in persuading any of our patients to undergo a second biopsy. As is shown in table 2, several patients had considerably more than one biopsy.

TABLE 2.—*Number of Needle Biopsies of the Liver as Related to the Number of Patients.*

Biopsies per Patient	Number of Patients
1	62
2	11
3	3
4	2
5	1
6	1
7	1
17	1

TECHNIQUE

On our patients an estimate of prothrombin activity is made routinely prior to biopsy. The patient is given hypodermically 50 to 100 mg. of Demerol. The skin is prepared with Merthiolate, and infiltration of the skin, subcutaneous tissues, and capsule of the liver with 1 per cent Novocain is carried out.

Biopsies are done at the bedside. The technique varies with the type of needle and the anatomic approach. In the subcostal approach the needle may be inserted into the liver when the organ is palpable; for safety a spot nearest the costal margin is desirable. When the transpleural method is employed, the upper limit of liver dullness is percussed and an interspace in the anterior or midaxillary line .5 inch below the line of dullness is used for the biopsy. With the infiltrating needle areas of unusual vascularity, abscesses, or other abnormalities which preclude successful biopsy occasionally may be found. In the subcostal route the infiltrating needle also is valuable to ascertain that the tip of the needle lies in the liver substance, inasmuch as the needle moves paradoxically with respiration.

FIG. 1. A photograph of liver biopsy needles: *(a)* a 6 cm. Silverman needle, *(b)* a 9 cm. Silverman needle, *(c)* the Turkel needle, and *(d)* the Hoffbauer modification of the Silverman type needle.

Speed is of no moment when the subcostal approach is used but is of the essence in the transpleural method. The patient must hold his breath to prevent tears in the diaphragm and/or liver substance. He is directed to take three or four deep breaths immediately preceding the introduction of the infiltrating and biopsy needles. He is then directed not to breathe,

and the needle is quickly inserted between the ribs into the liver. The necessary tissue is secured and the needle quickly removed; the whole process should take from five to ten seconds.

Our experience is based on the use of four different needles especially designed for liver biopsy: namely, the Silverman needle in 6 and 9 cm. sizes, the Turkel needle, and a modified Silverman needle designed by Hoffbauer (fig. 1). These instruments are constructed upon the principle of a large outer needle and a smaller inner cannula; the latter actually secures the biopsy specimen.

With the Silverman type and its modification the large needle is inserted into the liver substance and the trochar removed. The cutting cannula is inserted

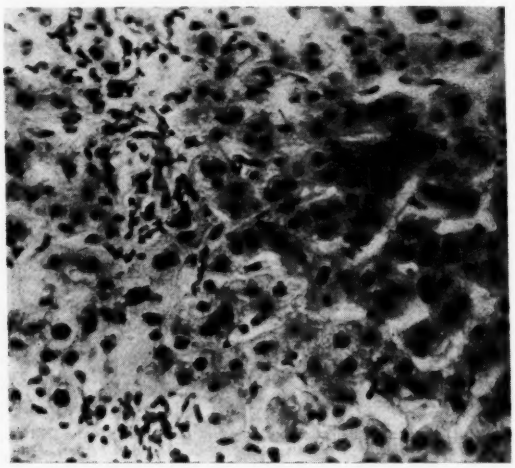

FIG. 2. A microphotograph of liver tissue from a patient with obstructive jaundice, showing relatively normal parenchymal cells without inflammation.

into the liver, the outer needle pushed down over the cannula and turned 360 degrees, and the cannula turned in an opposite direction 180 degrees; the whole instrument is then quickly withdrawn.

The Turkel needle is somewhat different. The inner instrument is a hollow tube with cutting teeth on the distal end and negative pressure is maintained by a large syringe on the tube while it is inserted into the liver substance. The needle is turned 360 degrees and the cannula withdrawn with the negative pressure still maintained.

In our experience by far the most satisfactory of the needles is the Silverman or its modification.

The success of this method depends on the experience of the operator; about 15 biopsies are necessary for him to become thoroughly conversant with the procedure. Occasionally biopsy is unsatisfactory because adequate specimens are not obtained. Failures constitute about 10 to 12 per cent of the total number of attempts. These procedures, in our opinion, are applicable only to adults. There were no children in our series of 82 patients.

The specimen which is obtained consists of a core of tissue 1 mm. in diameter and from 10 to 25 mm. long.

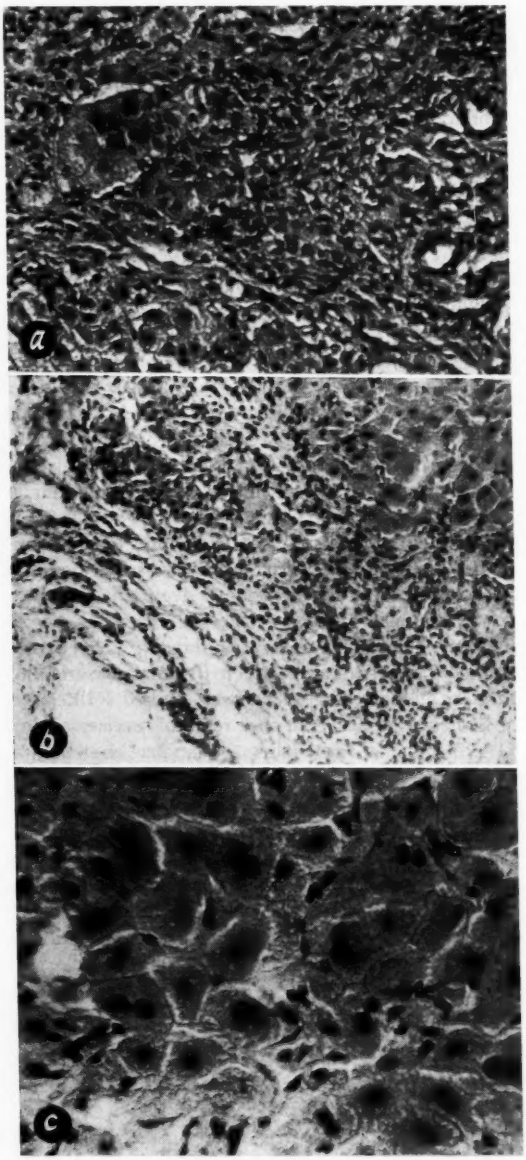

FIG. 3. Case 3. a. A microphotograph of liver tissue in chronic viral hepatitis showing fibrosis, round cell infiltration, and pseudolobule formation. The biopsy was performed two months after onset of jaundice.

b. Another microphotograph of liver tissue taken one month later showing the persistence of inflammatory changes.

c. A higher magnification of *b* showing regeneration of parenchymal cells.

Occasionally fragmentation of the tissues will occur in patients with advanced portal cirrhosis or neoplastic disease. The tissue is immediately fixed in 10 per cent formaldehyde to prevent degenerative changes so often seen when tissue from autopsy is studied.

CLINICAL VALUE

Jaundice

To the clinician there is perhaps no greater test of skill than the differential diagnosis of jaundice. Frequently with the information obtained from all practical liver function tests, the question of surgical or conservative therapy remains unanswered. Lippe and his co-workers[7] reviewed the records of 410 jaundiced patients for a ten year period and noted that in 6.3 per cent diagnosis could not be made without laparotomy. Each liver function test has its percentage of failures, and while liver function tests may substantiate a clinical impression, they cannot be used alone to make a diagnosis. Lippe's figures agree with those of Steigman and his colleagues,[14] who in a study of 675 patients concluded that in 5 per cent of cases it was not possible to make the correct diagnosis by the usual laboratory procedures.

Koch[4] discussed 12 patients with considerable icterus associated with negative tests for urobilinogen in the urine and with acholic stools. In this group 5 showed the characteristic histologic changes of infectious hepatitis and were successfully treated medically; 7 showed either normal liver tissue or evidence of obstructive biliary cirrhosis and, when operated upon, were discovered to have extra hepatic obstruction.

Histologically, obstructive jaundice produces bile plugs and intracellular bile granules chiefly in the central zone, indicating biliary stasis out of proportion to the liver damage. In later stages areas of bile casts are seen at the periphery of the lobule. Occasionally areas of bile necrosis are noted. In older cases, however, an increase of connective tissue is observed in the portal spaces. Roholm and his associates[12] noted that obstructive jaundice may be differentiated from acute hepatitis, because in the latter inflammation and destruction of the trabecular arrangements and proliferation of fibrous tissue are seen.

In our series the diagnosis was later substantiated by autopsy or by surgical exploration in 6 patients with obstructive jaundice. However, in 1 instance liver biopsy was misleading.

CASE 1. *History.*—H. M., a 33 year old Negro woman, entered the hospital with a two week history of nausea, vomiting, anorexia, and abdominal distress. She had noticed jaundice, dark urine, and dark stools for one week. The past history revealed only that she had occasionally suffered from indigestion.

Physical Examination.—On admission the temperature was 103 F., pulse rate 84, and blood pressure 110/80. Jaundice was present. The liver was enlarged 6 cm. below the right costal margin and was moderately tender.

Laboratory studies showed urobilinogen repeatedly present in the urine in the dilution of 1 to 20; the total serum bilirubin was 15.6 mg. per 100 cc. of serum, of which 11.4 mg. was direct reacting. The total serum protein was 7.86 Gm. per 100 cc. of serum, with 3.93 Gm. of albumin and 3.93 Gm. of globulin per 100 cc. The prothrombin time was 70 per cent; cephalin flocculation was 2 plus in forty-eight hours. The alkaline phosphatase was 7.9 Bodansky units. The patient had 3,400,000 red blood cells with a normal differential white blood cell count. The sedimentation rate was 44 mm. per hour. Serologic tests were positive for syphilis.

Needle biopsy of the liver showed numerous lymphocytes and polymorphonuclear leukocytes in and around the liver cells. Some fibrous tissue was present, and the bile ducts were empty but dilated. The histopathologic diagnosis was acute hepatitis. A second biopsy specimen eighteen days later failed to show any signs of inflammation. This observation correlated with the improvement manifested in the liver function tests, including a disappearance of the icterus.

Course.—After the second biopsy the patient developed signs of an acute abdominal disorder with much pain in the right upper quadrant radiating toward the right shoulder. The pulse was somewhat weak with a rate of 100; the blood pressure was 100/70. The blood count and hemoglobin did not change to any appreciable degree. The patient improved but continued to spike fever. Remissions and exacerbations continued until two and one-half months later when, after several attempts, stones finally were visualized by cholecystogram. The patient was operated upon and a specimen taken from the liver. Histopathologic examination revealed acute and chronic hepatitis with evidence of biliary obstruction and multiple small abscess formation.

CASE 2. *History.*—W. S., a 74 year old white man, had a three months' history of diarrhea, dark urine, pruritus, jaundice, and a 25 pound weight loss.

Physical examination revealed an elderly white man who showed evidence of considerable weight loss and icterus. The edge of the liver was three fingers below the costal margin. A large amount of bile drained from the needle after needle biopsy.

Laboratory Data.—Serum bilurubin was 27 mg. per 100 cc. of serum; other laboratory tests did not indicate liver damage. The histopathologic diagnosis was interpreted as obstructive jaundice. Laparotomy proved the clinical diagnosis of carcinoma of the head of the pancreas.

Viral Hepatitis

In 1865 Virchow suggested that the usually benign transient form of jaundice in young persons was the result of catarrhal inflammation which occluded the ampulla of Vater with a mucus plug, thereby giving rise to the term "catarrhal jaundice." This erroneous concept remained in vogue for many decades. Convincing evidence of hepatic involvement in all stages of the disease could be provided only by biopsy material. The first systematic studies were performed by Iverson and Roholm[3] in 1939.

The pathologic pattern of viral hepatitis has been well described by Mallory.[8] It consists of periportal and intralobular inflammatory infiltration, lobular disarray, liver cell degeneration and necrosis, regeneration, and occasionally biliary stasis. These changes

were observed in icteric and nonicteric cases, thus substantiating the idea that viral hepatitis can exist without jaundice. Mallory noted that in the groups who recovered, the last condition to revert to normal was the periportal inflammatory infiltration. Recurrent attacks histologically were like the initial attack. It was impossible to recognize any consistent anatomic basis for icterus.

Occasionally in chronic nonicteric viral hepatitis needle biopsy of the liver may be positive when the clinical picture and liver function tests are equivocal. Koszalka and others[5] observed that among 100 patients with hepatitis who had symptoms of asthenia, mental depression, and vague gastrointestinal complaints, 10 per cent of the diagnoses of psychoneurosis were incorrect. Neefe[10] noted that acute hepatitis may be followed by a chronic form of the disease which may persist for months and be responsible for incapacitating symptoms. Liver function tests in such

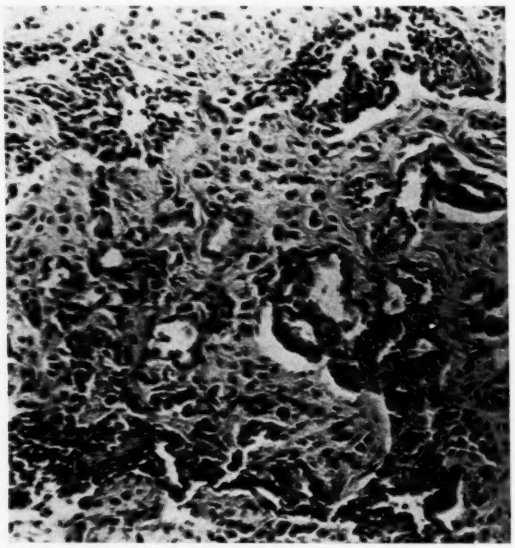

FIG. 4. Case 5. A microphotograph of liver tissue in which the majority of liver cells are replaced by metastatic adenocarcinoma.

instances occasionally may be normal. Neefe reported 3 such patients in whom the principal lesion was an inflammatory process involving the portal triads.

Infectious Hepatitis and Cirrhosis

The relationship of hepatitis to cirrhosis has remained a time-honored problem. However, within the past ten years many authors have reported patients with protracted or recurrent hepatitis who eventually developed typical atrophic portal cirrhosis. They had liver biopsies throughout the course of their illness; necropsy specimens from some proved to be histologically identical with the pathologic pattern of portal cirrhosis.

Volwiler[17] observed 13 patients, 9 of whom had persisting active hepatitis proved by biopsy from four to forty-two months after the onset of jaundice in the initial state of the disease. Krarup and Roholm[6] presented 12 patients with protracted hepatitis which demonstrated a gradual transition to cirrhosis. In the early stages cellular infiltration and degenerative changes are paramount. Gradually round cell infiltration becomes dominant with the subsequent appearance of fibrocytes and newly formed bile ducts. The connective tissue becomes progressively more distinct. Relapsing cases often present acute and chronic changes side by side.

CASE 3. *Past History.*—S. A., a 60 year old Negro man, was known to have bronchiectasis, nephrolithiasis, diabetes mellitus, and rheumatoid arthritis. Four months previously a nephrolithotomy had been done, during which a blood transfusion had been administered.

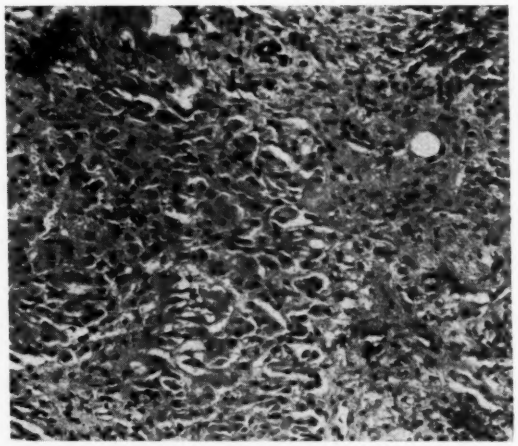

FIG. 5. Case 7. A microphotograph of liver tissue in which diffuse fibrosis with many round cells throughout the liver parenchyma compatible with portal cirrhosis may be seen.

Present Illness.—With the onset of the present illness the patient noticed fever, chills, epigastric distress, and jaundice. The liver was enlarged slightly below the right costal margin; liver function tests were abnormal. The patient recovered after a stormy course in the hospital.

Biopsy two months after the onset of the present illness, at which time the liver was enlarged 6 cm. below the right costal margin, revealed severe chronic hepatitis with periportal cirrhosis. Biopsy a month later still showed considerable fibrosis, although regeneration of the epithelial cells was evident. The liver function tests indicated the patient had improved (fig. 3).

Malignancy

Although the most valuable contribution of needle biopsy of the liver has been the elucidation of the various stages of viral hepatitis, from the point of view of pathologic changes an equally significant ad-

vance has been made in the diagnosis of malignant neoplastic disease which involves the liver. If the diagnosis of malignant implantations in the liver substance can be made initially when malignancy is suspected, much diagnostic study can be eliminated, saving the patient time, inconvenience, and money. Two processes of neoplastic nature may affect this organ: namely, primary hepatic carcinoma (hepatoma) or metastases from primary lesions elsewhere in the body. From the point of view of needle biopsy the difficulty in diagnosing this disease lies in the fact that metastatic as well as primary neoplastic change in the liver is usually patchy in distribution. It may well be that a biopsy that secures adequate liver tissue will fail completely to locate the malignant nodule. However, it is equally apparent that if a biopsy specimen contains malignant cells, the diagnosis is final and other studies need not be carried out save for academic interest.

Safdi and his associates[13] studied 53 cases of proved malignant disease with hepatic involvement. In 41 the biopsy specimen was positive for tumor cells.

In our somewhat smaller series of cases 16 biopsies were done on 13 patients who had proved malignant disease. In 11 biopsies malignant tissue was recovered in the first attempt. In 1 patient malignant tissue was recovered in each of two different attempts. In 2 other patients, each of whom had 2 biopsies, demonstration of malignant disease failed. Thus, of 16 biopsies 4 failed to reveal malignant disease in 2 patients who were known to have malignancies of the liver. In other words, diagnosis in the patients who had proved malignant disease was accurate in about three-fourths of the cases, essentially the same proportion achieved by Safdi and others. We believe, therefore, that a biopsy might well be among the first diagnostic studies undertaken in any patient in whom malignant degeneration of the liver is suspected. We are of the opinion that liver biopsy is an adjunct in the diagnosis and study of neoplastic disease. It is interesting to note that the diagnosis was changed in 3 cases by positive findings at biopsy.

CASE 4.—D. H. was a Mexican man who came into the hospital with jaundice, deepening stupor, and an ascites-filled abdomen, in which was palpated a large hard nodular liver that by clinical examination was thought to contain malignant cells. Two biopsies showed advanced biliary cirrhosis; the diagnosis of cirrhosis was later substantiated by autopsy.

CASE 5.—J. D., a white man, came to the hospital with a history of chronic alcoholism, jaundice, stupor, ascites, and a large smooth liver. Clinical examination suggested an advanced atrophic portal cirrhosis. Liver biopsy revealed infiltration by myriads of malignant cells (fig. 4).

CASE 6.—F. S. was another alcoholic patient who had the symptoms described in case 5. He, too, was thought to have atrophic cirrhosis. To the clinician's surprise the histopathologic diagnosis of the biopsy specimen was malignant tissue.

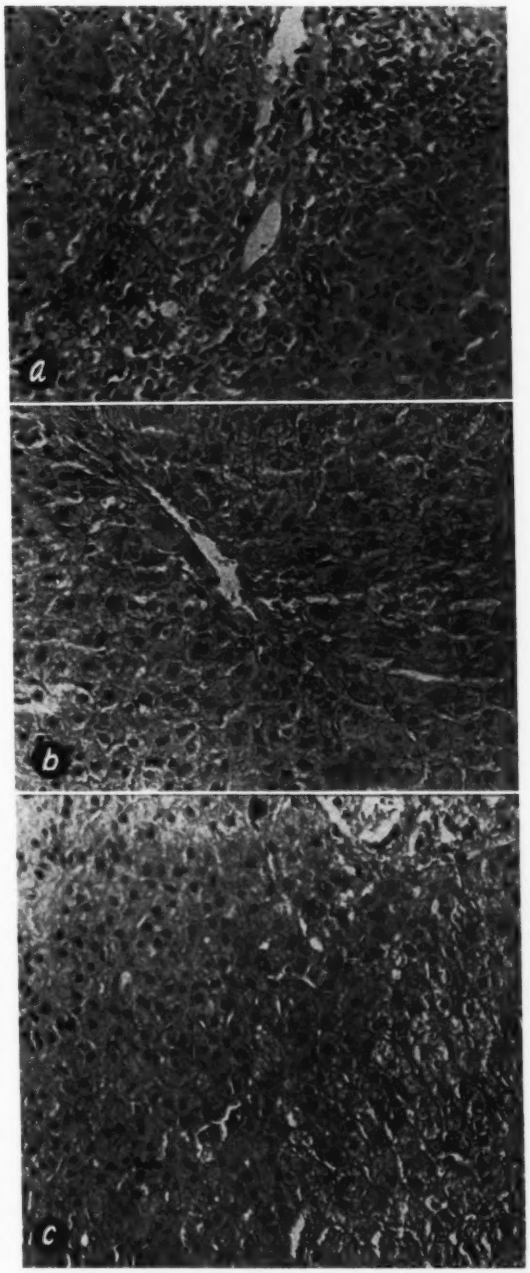

FIG. 6. Case 8. a. A microphotograph of liver tissue from a patient with viral hepatitis of nine months' duration, showing extensive periportal inflammatory changes. Regeneration of parenchymal liver cells also may be noted.

b. Another microphotograph of biopsy tissue taken approximately three weeks later, showing decrease in inflammatory process.

c. A third microphotograph taken two months later showing a return to essentially normal liver parenchyma.

Liver Function Tests

For the most part, particularly in hepatitis and cirrhosis, the degree of anatomic change as determined by needle biopsy correlated well although not specifically with liver function tests. However, certain notable exceptions were apparent.

CASE 7.—D. P., a 45 year old white man, by clinical examination was noted to have a large, firm liver. A series of liver function tests failed to show any impairment of liver function; however, needle biopsy revealed characteristic changes of portal cirrhosis (fig. 5).

CASE 8.—J. W., a 39 year old Negro man, was hospitalized with a history of jaundice, dark urine, anorexia, chills, and fever of one week's duration. The liver was enlarged 3 cm. below the right costal margin and was firm and nontender. Liver function tests were normal save for the serum bilirubin, which was 11.3 mg. per 100 cc. of serum. Liver biopsy revealed acute hepatitis (fig. 6). Later, during hospitalization the liver function tests appeared progressively more abnormal until convalescence began.

Koch[4] described 6 cases of cirrhosis in which liver function tests were normal and the biopsy specimen diagnostic of the lesion. Hoffbauer and his co-workers[2] noted that cirrhosis may exhibit striking differences in

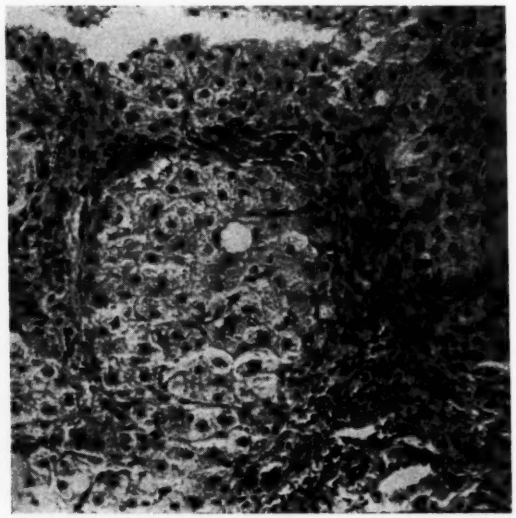

FIG. 7. Case 9. A microphotograph demonstrating the typical histologic picture of moderately advanced portal cirrhosis with periportal fibrosis and pseudolobule formation.

degree and type of liver function impairment. In other unusual types of liver damage, for instance amyloidosis, abnormal function tests may not indicate the true nature of the disease process. Biopsy helps avoid some of these difficulties.

Prognosis and Therapy

McHardy and others[9] observed needle biopsy of the liver to be of value in selecting and following therapy in cirrhosis. Their studies revealed uncomplicated fatty infiltration to be reversible. They were of the opinion that choline and methionine were of value in cirrhosis but not in viral hepatitis. Ralli and his co-workers,[11] in extensive investigation of therapy of cirrhosis with liver extract given intravenously, studied the degree of regeneration by liver biopsy.

We had an unusual opportunity to study the progress of degenerative disease of the liver secondary to malnutrition of ethanolic origin.

CASE 9.—J. W. H., 47 year old white man, was admitted to the hospital acutely and chronically intoxicated. He was observed to have a large hard liver. Relentlessly biopsies were done every Wednesday for seventeen consecutive weeks. The organ decreased in size, liver function tests rapidly approached normal, and the histologic pattern of the liver improved (fig. 7).

Autopsy and Laparotomy

Topp[16] reported a series of 16 autopsies in which needle biopsy was done preceding death; diagnosis from the biopsy correlated with the autopsy findings in 14 cases.

In our series of 82 patients who had biopsies, 15 ultimately had autopsies and 9 had laparotomies. Thus, 24 patients had the biopsy diagnosis confirmed or demonstrated to be in error. Of the patients brought to autopsy 12 postmortem diagnoses agreed fully with the biopsy diagnosis. Among the 3 failures in diagnosis in this group 1 was a patient with a clinically typical portal cirrhosis, presumably confirmed by 2 needle biopsies; however, the patient also had a primary hepatoma. In another patient the biopsy diagnosis was cirrhosis; however, at postmortem examination the diagnosis was established as sarcoidosis. The third failure was on a patient who had carcinoma of the pancreas with obstructive jaundice. The needle biopsy adequately revealed the obstructive phase of the disease, although metastatic lesions within the hepatic substance were not discovered.

In the 9 cases studied surgically another patient had obstructive jaundice due to carcinoma of the pancreas. In her case, also, the biopsy failed to detect the malignant implants in the liver substance. A second failure was in a patient on whom exploratory laparotomy revealed numerous small liver abscesses, while the needle biopsy specimen revealed what was thought to be viral hepatitis.

In our series, therefore, the correlation between diagnosis by needle biopsy and diagnosis by surgery was greater than 75 per cent (7 out of 9), and a slightly better correlation (12 out of 15) was observed between diagnosis by needle biopsy and diagnosis by surgery or autopsy.

SUMMARY AND CONCLUSIONS

The results of 136 needle biopsies of the liver performed on 82 patients are presented; no deaths and only 1 relevant complication occurred.

Only after sufficient experience with the method is the operator consistently able to procure tissue adequate for histologic examination. The subcostal approach is easier and, in our opinion, less dangerous than the transpleural method. The best instrument for subcostal biopsy is the standard Vim-Silverman needle; for the transpleural approach the Hoffbauer modification of the Silverman needle is recommended. For unknown reasons it is impossible to procure adequate tissue in about 10 to 12 per cent of cases.

Needle biopsy is well suited to the liver because the functional unit, the lobule, is only a few square millimeters in diameter and parts of several units usually are procured with each biopsy. The majority of diseases involving the liver are diffuse in nature and, therefore, are accurately represented. In diffuse processes such as cirrhosis, hepatitis, and toxic degenerations, biopsy and autopsy correlation is excellent. The fundamental pathologic pattern of a surprisingly high percentage of patchy lesions of the liver, such as metastatic nodules, is shown by biopsy. Although few such cases appear in our series, several authors have reported the diagnosis of such unusual diseases as amyloidosis, kala-azar, miliary tuberculosis, Gaucher's disease, brucellosis, and hemochromatosis through needle biopsy of the liver. Needle biopsy is of decided value in the diagnosis and study of chronic viral hepatitis. Serial biopsies allow progressive study of the benefits of therapy in chronic liver disease, particularly in fatty degeneration and cirrhosis. In some instances information of prognostic value is obtained. It is possible that in time needle biopsy may elucidate the relationship between hepatitis and cirrhosis more fully than at present.

In general the liver function tests and biopsies in our series agreed; however, there was no obvious agreement between any one specific liver function test and histologic change in the tissues. In some instances biopsy revealed the precise diagnosis when function tests failed to show any abnormality.

In our opinion needle biopsy of the liver is a relatively safe, easily performed diagnostic procedure from which valuable information may be gained.

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ABSTRACT OF DISCUSSION

DR. WILLIAM S. REYNOLDS, Dallas: The authors, Drs. Stone and Grater have made a thorough approach to this subject. Their cases and the more than 4,000 biopsies previously reported point out that needle biopsy is a valuable, practical method for the diagnosis of liver disease which no longer should be considered an experimental method.

From my association with a series of more than 150 biopies in a charity hospital and with a limited number of cases of gastroenterologists in Dallas, I have found a Vim-Silverman needle to give satisfactory specimens and to be the easiest to use. The intercostal approach seems most practicable in the majority of cases. In private practice early liver disease in which the liver is often normal size or only slightly enlarged is more frequently seen. Needle biopsy by the subcostal approach is certainly hazardous in these cases. I believe the possibility of hemorrhage after biopsy is minimized by the intercostal approach on the basis that the diaphragm acts as a pressure bandage over the biopsy site. I have seen biopsy specimens from the pancreas and the stomach taken in error by the abdominal approach. Also, I have seen 2 cases of biliary peritonitis result from the needles traversing a large distended bile duct in obstructive jaundice of long standing.

I would disagree with the authors as to the advisability of doing biopsies on patients whose prothrombin times are less than 50 per cent of normal, the generally accepted lower limit of safety. The low prothrombin times of such patients, if not raised by vitamin K therapy, could be elevated by transfusion to a safe level for biopsy.

I would like to ask Drs. Stone and Grater these questions:

(1) What complications have they observed in their cases?

(2) Is this method valuable in evaluating the progress of chronic parenchymal liver disease?

(3) In what conditions is needle biopsy of the liver the diagnostic method of choice?

DR. STONE, closing: These are the answers to the questions raised by Dr. Reynolds:

(1) The only complication worthy of note was the acute abdominal disorder mentioned in the description of case 1. Although we suspected hemorrhage we were unable to prove it.

(2) We believe that needle biopsy of the liver is of distinct help in evaluating the progress of chronic parenchymal liver disease.

(3) I am not familiar with any conditions in which liver biopsy is the diagnostic method of choice. Any disease of the liver may be more adequately defined in terms of its architectural changes through study of tissue provided by needle biopsy.

ACUTE DISEASES OF THE PANCREAS

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THE frequency of acute pancreatitis is unknown, but it is thought to be rare. Balser[1] in 1882 described the first known case of pancreatitis. Hamperl[9] in 1933 reported 67 cases of acute pancreatitis in 22,577 necropsies, which is 0.3 per cent. However, the disease probably is more common than is generally thought. Many cases are mild and most likely undiagnosed; many physicians are not pancreatitis conscious. Morley[12] stated that pancreatitis is important out of proportion to its frequency because it enters into the differential diagnosis of most catastrophes of the upper abdominal region and because of its high mortality.

CLASSIFICATION

Acute pancreatitis is classified as acute hemorrhagic (necrotic) pancreatitis and acute edematous (interstitial) pancreatitis. Most likely the two types are different stages of the same process (fig. 1). Popper[16] observed at surgery a patient with the interstitial form who a few days later presented findings of the necrotic form at necropsy. Also the term acute pancreatic necrosis[3] is preferred to acute hemorrhagic pancreatitis, for actually there is marked necrosis of the gland and hemorrhage may or may not be a prominent feature. For completeness, acute pancreatitis as a rare complication of mumps is mentioned.

PATHOPHYSIOLOGIC PROCESS

The pathophysiologic process of pancreatitis is interesting and generally agreed upon. Baylin and Starling in 1902 showed that an excitatory substance, secretin, was responsible for the flow of pancreatic juice when hydrochloric acid was introduced into the duodenum. In pancreatitis the pancreatic enzymes carry on their physiologic properties of digestion, but the process is autodigestion. Trypsinogen is absorbed by the blood stream with elevation of the serum amylase level and increase in diastase concentration in the urine, which factors are important in laboratory diagnosis. Lipase acts upon the fats, splitting them into glycerol and free fatty acids. The fatty acids combine with ionizable calcium, forming hard specks of calcium deposits considered of diagnostic significance at surgery, at necropsy, and in roentgenograms of the abdomen. The deposits of calcium may be of such degree as to cause tetany.[4] There also may occur glycosuria, hyperglycemia, or hypoglycemia. Thus, acute pancreatitis is a chemical disease in the beginning, and superimposed infection of the necrotic tissue may occur later. The pathophysiolic picture is fairly clear, but what initiates the sequence of events is a matter of perennial investigation and debate.

Gallbladder disease must be related to pancreatitis in that from 60 to 70 per cent of patients with the disease have gallstones. Opie[13] in 1901 described the classical case of pancreatitis in which a small stone was lodged in the ampulla of Vater with resulting reflux of bile into the pancreatic ducts under increased pressure. For awhile the presence of a stone in the ampulla of Vater was thought to be the answer. However, Schmieden and Sebening[20] found a stone impacted in only 4.5 per cent of 1,278 cases, although 68 per cent had gallstones. Rienhoff and Pickrell[19] have shown by dissections that 18 per cent of persons have a common channel of bile duct and pancreatic duct and Popper[17] has shown that of patients with pancreatitis, 89 per cent have a common channel. In persons with a common duct channel the reflux of bile is thought to be due to spasm of the sphincter of Oddi since only rarely is a stone present in the ampulla of Vater. Tejerina-Fotheringham[21] has shown that in addition to the reflux of bile, the added feature of infection must be present. For many years it has also been known that alcoholic persons are somewhat prone to develop pancreatitis.

Most cases of pancreatitis can be explained on the basis of a common channel of the bile duct and the duct of Wirsung, stone in the ampulla of Vater, spasm of the sphincter of Oddi, gallstones, infected bile, and alcoholism. There are cases which cannot be explained by the above, and these may be due in part to obstruction within the pancreatic ducts themselves. Rich and Duff[18] in 1936 demonstrated obstructions to the pancreatic duct by epithelial metaplasia or inspissated pancreatic secretions in 50 per cent of their cases. As stated by Boyd,[3] all of these factors probably enter into the picture.

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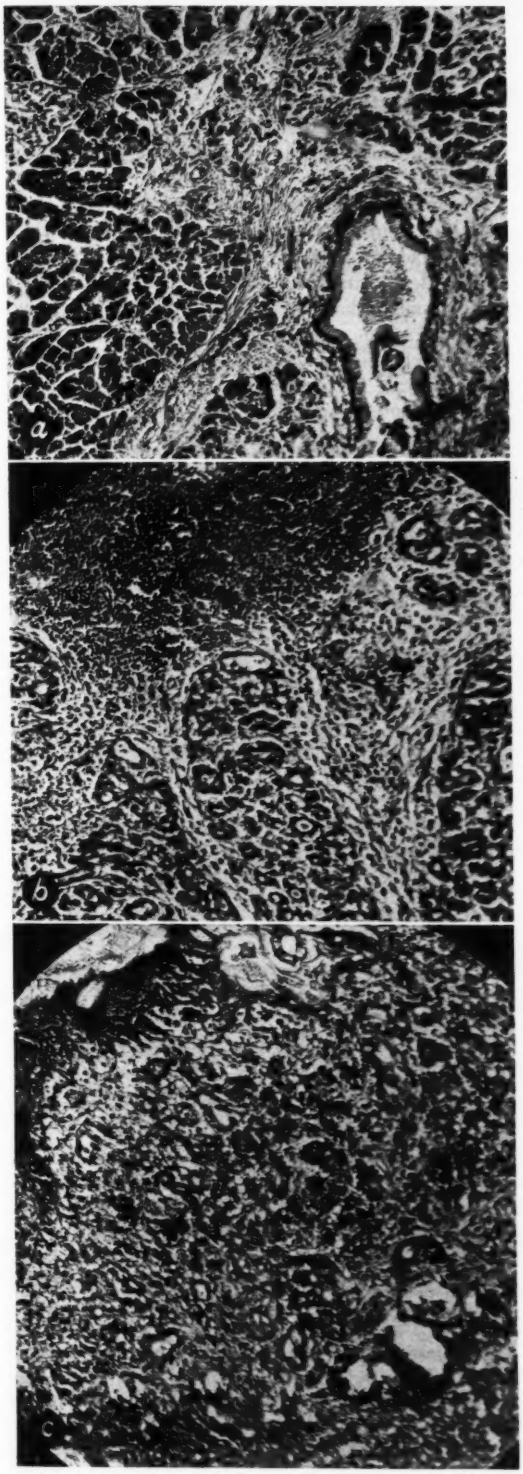

FIG. 1. Photomicrographs of pancreatic tissue showing (*a*) a normal pancreas, (*b*) acute interstitial pancreatitis with considerable hemorrhage, and (*c*) acute interstitial pancreatitis with fat necrosis. (Illustrations courtesy of Dr. M. D. Haley, Department of Pathology, Baylor University College of Medicine, Houston, Texas.)

DIAGNOSIS

The chief symptoms of pancreatitis are nausea, vomiting, and pain. The only significant feature of the nausea and vomiting is that they do not influence the pain. The pain is not pathognomonic of pancreatic disease but usually is such that the diagnosis of pancreatitis should be suspected. Characteristically the pain is in the epigastrium and is constant in character with radiation straight through into the back. There is a steady increase in severity depending on the degree of edema, necrosis, and vessel spasm, and it has been said by some to be the most severe pain affecting man. When the head of the gland is involved, the location is usually in the right epigastrium or right upper quadrant. Pain in the left side of the chest and the left shoulder usually is associated with involvement of the tail of the pancreas. There is resistance and epigastric tenderness of the abdominal wall but no boardlike rigidity as with a ruptured peptic ulcer.

With spread of the pancreatic secretions into the adjacent structures, the disease assumes new characteristics. Retroperitoneal spread of the hemorrhagic pancreatic juices produces flank tenderness and ecchymosis in the flank (the Grey-Turner sign[22]). When there is spread of the fluid anterolaterally in the extraperitoneal space, there may develop bluish discoloration (Cullen's sign). The lesions of discoloration are associated with late stages of severe forms of pancreatitis and are seldom observed. Halsted[8] observed that when the palpating hand is removed from the abdomen, the white imprint of the fingers remains for a few minutes. Many authors also refer to the facial cyanosis which most likely is due to shock rather than to any specific manifestation of pancreatitis. The sudden onset of abdominal pain with shock and cyanosis perhaps is not as common as formerly thought. Involvement of the root of the mesentery produces selective ileus, and general peritoneal involvement produces a generalized paralytic ileus just as any type of peritonitis does.

Clinical tetany occurs,[6] but usually it is after the first few days of the illness. The temperature chart shows low grade fever and signifies activity of the process as long as the temperature is elevated. Hyperpyrexia usually is associated with fatal cases.[14]

Most patients with acute pancreatitis are not in condition for extensive roentgen-ray studies but in questionable cases the following findings may be helpful: widening of the duodenal loop, inverted three sign in the duodenum, displacement of the duodenum and spasm of the duodenal loop,[6] and localized ileus in the transverse colon and upper jejunum.[10]

Next to thinking of acute pancreatitis, the most important feature in establishing the diagnosis is elevation of the serum amylase level. The serum amylase level is elevated early in the disease and can be de-

termined in an hour or less. The serum lipase level also is elevated early but determinations take twenty-four hours. High serum amylase determinations are found only in acute pancreatitis.[2, 5, 14] Slight to moderate elevations of serum amylase occur in perforated ulcer, intestinal obstruction, peritonitis, renal impairment,[2] gallbladder disease, and mumps.[8] Glycosuria is seen in from 5 to 20 per cent of severe cases and the fasting blood sugar level is often elevated.[17] The white blood count usually is elevated and the sedimentation rate is increased. Edmondson and Berne found hypocalcemia to be present in 70 per cent of their cases.[4] Hypocalcemia usually is not of diagnostic importance in that it does not occur early in the disease, but a serum calcium level less than 7 mg. per 100 cc. is a serious prognostic observation.

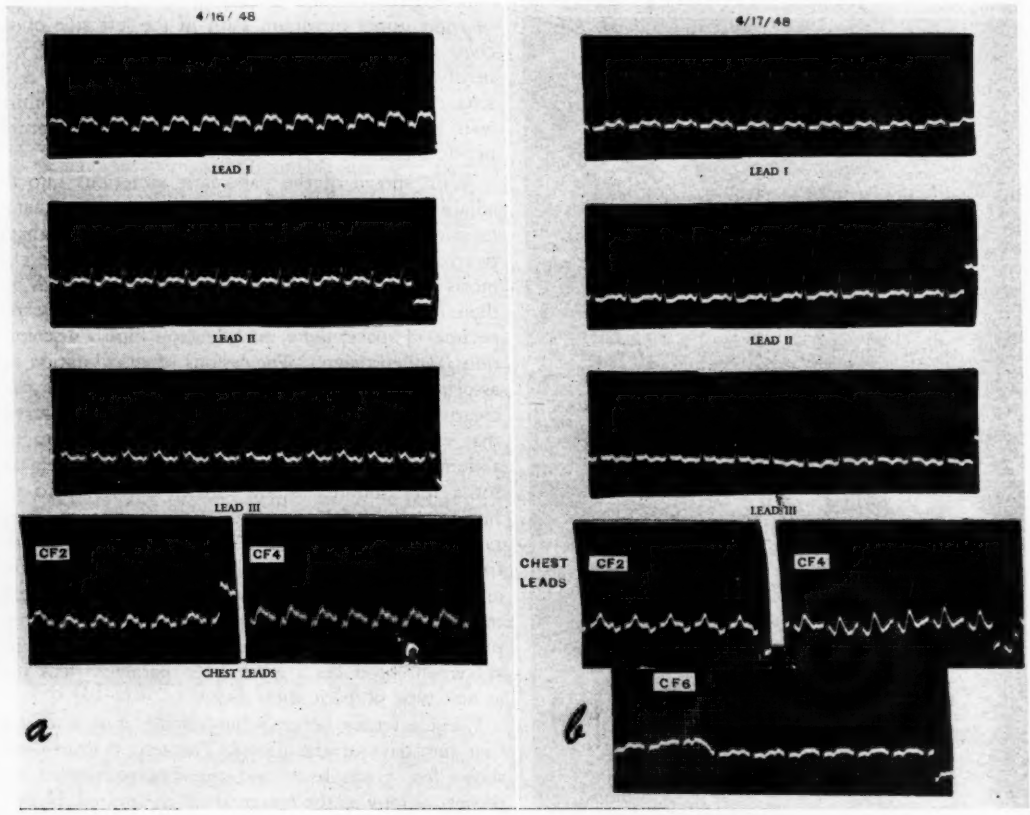

FIG. 2. Electrocardiograms taken in a case of acute pancreatitis *(a)* four hours after onset of pain, showing depression of ST_1 and ST_2 segments and elevation of the ST_3 segment, and *(b)* the second day of the illness, showing minimal ST segment changes. Changes suggestive of left ventricular hypertrophy appear in both tracings.

DIFFERENTIAL DIAGNOSIS

Any illness which enters into differential diagnosis of acute conditions of the abdomen may be confused with acute pancreatitis. However, the most difficult problems are myocardial infarction, perforated peptic ulcer, gallbladder disease, intestinal obstruction, and mesenteric thrombosis.

The pain of myocardial infarction may be a steady epigastric pain increasing in severity, and it characteristically radiates into the left shoulder and arm. Drop in blood pressure, tachycardia, changes in cardiac rhythm and cardiac sounds, electrocardiographic findings, and serum amylase determinations should make the differentiation. However, it should be remembered that transitory S-T segment and T wave changes may occur in acute pancreatitis.[7]

Perforated peptic ulcer usually is more dramatic in onset and the abdomen is boardlike. Often there may be obtained a history suggestive of peptic ulcer in the past and air may be demonstrated below the diaphragm upon roentgen examination. To add to the complexity, occasionally perforation of gastric ulcer into the pancreas occurs.

Gallbladder pain may be in the epigastric region or upper right quadrant as in pancreatitis. In gall-

bladder disease there often is a history of previous symptoms and the knowledge of gallstones or "nonfunctioning gallbladder." The tenderness is in the right upper quadrant laterally rather than medially and serum amylase levels will be normal or slightly elevated.

Intestinal obstruction has as its cardinal symptoms pain, nausea, and vomiting, and this pain may be epigastric. Close observation of a patient with intestinal obstruction will usually demonstrate that the pains are intermittent and crescendo in type, and as the discomfort increases loud abdominal peristaltic sounds are audible. Roentgen-ray studies will reveal the presence and location of the obstruction.

Mesenteric thrombosis is most difficult to diagnose because of its rarity and similarity to other serious diseases of the abdomen. Vascular occlusion of the mesentery is characterized by sudden severe abdominal pain which is constant but may have colic-like exacerbation. The onset is quickly followed by shock, paralytic ileus, and abdominal distention. Melena may also be present.

In discussing the differential diagnosis of acute pancreatitis the early phase of the disease has been considered. Myocardial infarction, gallbladder disease, ruptured peptic ulcer, and intestinal obstruction may be associated with pancreatitis as a late complication.

TREATMENT

The diagnosis of acute pancreatitis must be early and distinguished from acute abdominal conditions requiring surgery, for it has been firmly established that treatment is medical rather than surgical.[2, 17, 20] The mortality with surgical treatment is around 50 per cent.[5, 20] Gage[5] reported a large series of cases treated with conservative medical therapy and splanchnic block without a mortality. Popper[15] in 1931 reported remarkable relief of pain in acute pancreatitis with paravertebral block on the left side at the level of the eighth to tenth thoracic spinous processes with 1 per cent Novocain. Gage[5] stated that splanchnic block with the injection of 30 to 40 cc. of 1 per cent Novocain at the level of the first lumbar process produces dramatic relief of pain. Following the block, spasm of the sphincter of Oddi, arterioles, and venules is thought to be released, thus decreasing pressure and edema within the pancreas.

The aim in therapy is to put the pancreas at rest and for this reason Demerol with its atropine-like action is preferred to morphine with its vagotonic action.[17] The intractable pain of pancreatitis may be due in part to the repeated use of morphine, resulting in increased spasm of the sphincter of Oddi and increased pressure within the pancreatic ducts. Constant gastric suction is instituted at once,[17] with the oral administration of alkalies[2] to cut down the hormone stimulation to pancreatic secretion. Bockus[3] recommended atropine sulfate 1/75 to 1/150 grain every four hours to suppress vagal activity. Blood transfusions are administered as indicated for shock and hemorrhage. Nourishment should be entirely by clyses, but care should be exercised with glucose infusions to be sure that blood sugar levels are controlled. With hyperglycemia the administration of regular insulin is indicated. Calcium gluconate is administered intravenously for hypocalcemia as indicated by serum calcium determinations and to help decrease spasm.[5] Penicillin is administered from the beginning to help prevent and treat infectious complications.

It has been said that acute pancreatitis should be treated medically rather than surgically, but surgery may be necessary for concommitant diseases and complications. Observation for abscess formations, peritonitis, and cysts should be carefully maintained. When reasonable doubt exists as to the presence of a condition requiring surgery, surgery should not be delayed. If a surgical emergency is not found, proper treatment for the pancreatitis can be instituted.

CASE REPORT

J. A. B., a white man, aged 55, was seized with acute epigastric pain with radiation into the back at 9:30 a. m. Emergency treatment consisting of morphine sulfate ½ grain hypodermically and papaverin 1 grain intramuscularly was given without relief. At 10:10 a. m. morphine sulfate ¼ grain hypodermically was administered, and the patient was transferred to Hermann Hospital. When seen at the hospital at 10:30 a. m., he was broken out with cold perspiration, and the pain was unchanged. He was given morphine sulfate ¼ grain intravenously with only partial relief. Blood pressure was 240/140; pulse 100 per minute with sinus rhythm. At 10:45 a. m. cyanosis of the face and abdomen developed. At 11:30 a. m. morphine sulfate ¼ grain was given with little relief of pain.

Initial laboratory data were reported as follows: hemoglobin 17 Gm. per 100 cc. of blood, red blood cells, 5,000,000 per cubic millimeter of blood, white blood cells 29,900 per cubic millimeter of blood, stabs 11 per cent, segments 75 per cent, lymphocytes 13 per cent, and monocytes 1 per cent; urine yellow and acid with a specific gravity of 1.025, albumin plus 4, sugar negative to tests and microscopically; serum amylase 256 Winslow units (normal 8 to 64 units). An electrocardiogram on admission (fig. 2a) was reported as follows: "Left ventricular hypertrophy. Suggest serial tracings to see if the depression of ST_1 and ST_2 and the elevation of ST_3 is significant."

During the remainder of the first hospital day the patient had persistent nausea and vomiting, but pain was somewhat less. On the second hospital day there was abdominal distention with moderate epigastric tenderness and resistance. Axillary temperature was 101 F., blood pressure 128/78. Serum calcium was reported as 6.2 mg. per 100 cc. and blood sugar 160 mg. per 100 cc. The patient was given calcium gluconate intravenously in addition to glucose infusions and constant oxygen. Pain was not as marked. An electrocardiogram (fig. 2b) showed no ST segment changes. Morphine was administered three times; duodenal drainage was begun; and the administration of penicillin was started. The patient's condition seemed critical.

The third hospital day was essentially unchanged.

On the fourth hospital day the patient's axillary temperature was 105 F. at 2:50 p. m. Serum calcium measured 10.2 mg. per 100 cc. The patient's temperature remained elevated, and he died at 8:50 p. m. Permission for necropsy was not obtained.

A summary of the data in this case appears in table 1.

TABLE 1.—*Tabulation of Data in a Case of Acute Pancreatitis.*

Hospital Day	1	2	3	4
Morphine sulfate	1¾ gr.	½ gr.	¼ gr.	0
Maximum temperature	100 F.	102 F.	102 F.	105.6 F.
White blood cells	29,900 per cu. mm.			
Hemoglobin	17 Gm. per 100 cc.			
Serum amylase	256 Winslow U.			
Serum calcium		6.2 mg. per 100 cc.		10.2 mg. per 100 cc.
Urine	Albumin 4+ Sugar neg.	Albumin 4+ Sugar neg.		
Blood sugar		160 mg. per 100 cc.	139 mg. per 100 cc.	200 mg. per 100 cc.

This case undoubtedly was one of acute pancreatitis because of the symptoms, clinical course, and serum amylase determinations and was chosen because it presents several interesting features of the disease. During the initial stage of the illness myocardial infarction was entertained as the diagnosis of choice by several observers, including a cardiac consultant, because of the location of pain, cyanosis, and electrocardiographic changes. However, the persistence and perhaps increase of pain with large doses of morphine is characteristic of pancreatitis rather than myocardial infarction, and a follow-up electrocardiogram (fig. 2b) showed that the changes were transitory. As mentioned above, low serum calcium and hyperpyrexia are indicative of poor prognosis. The serum calcium level became elevated after calcium therapy, but the initial determination was 6.2 mg. per 100 cc., and for nine hours prior to death the temperature was above 104 F. Splanchnic block was not used, for we were not familiar with the procedure at the time (April, 1948).

SUMMARY

Acute pancreatitis most likely occurs more often than statistics show. The disease is a chemical one initially, and gallbladder disease, reflux of bile, alcoholism, and pancreatic duct obstructions are involved in its development. Most important in the diagnosis is thinking of the disease, and a high serum amylase level in confirmatory. The aim of treatment is to put the pancreas at rest. Dramatic relief is obtained from splanchnic block, and Demerol is the analgesic of choice. Blood calcium levels are of value in following therapy and for prognosis. Late complications requiring surgery should be anticipated.

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ABSTRACT OF DISCUSSION

DR. EDWARD J. LEFEBER, Galveston: At the University of Texas Medical Branch Hospitals in Galveston, the routine use in the past five years of the serum amylase test in patients with severe upper abdominal pain has increased markedly the number of cases of pancreatitis recognized clinically. Previously the diagnosis was made less frequently and confirmed only in the operating room or at the autopsy table. The signs and symptoms of acute pancreatitis are not diagnostic in themselves, for the disease mimics other acute medical and surgical conditions. The result of the serum amylase test is often the deciding factor which focuses attention upon the pancreas.

In my experience, the clinical picture of severe abdominal pain, nausea, and vomiting associated with rigidity of the upper part of the abdomen and the signs of severe shock indicate a fulminating necrotic pancreatitis, the prognosis of which is ominous. Evidence of the infrequent occurrence of Grey-Turner's and Cullen's signs is manifest by the absence of any reference to them in the case histories of 14 patients with acute pancreatitis admitted to the Medical Branch Hospitals during the past fifteen years.

Early recognition of acute pancreatitis and the immediate institution of a medical program of therapy designed to place the pancreas at rest are paramount for successful manage-

ment of the disease. The medical management of acute pancreatitis in effect at the John Sealy Hospital is with some minor modifications essentially that outlined by the authors. Each patient is fully atropinized to eliminate vagal activity. Pain is controlled by the use of Demerol. Splanchnic block has been used in a few patients with immediate relief of pain. It has not been used in enough cases to draw any conclusions as to its over-all value in the therapeutic management of the disease. Surgery during the acute phases of the disease has been reserved for those patients in whom an associated acute disease requiring surgery could not be ruled out, those patients with obstruction of the biliary tract, and those patients who do not respond to a rigorous program of medical therapy. With subsidence of the acute manifestations, each patient has a thorough diagnostic study to rule out disease of the liver and biliary tract. Approximately 50 per cent of our patients were found to have chronic cholecystitis and cholelithiasis. When found, pathologic conditions of the biliary tract should be corrected as a prophylactic measure against further recurrence of acute pancreatitis. Disease of the liver when present should be treated vigorously.

SURGICAL TREATMENT OF BENIGN GASTRIC AND DUODENAL ULCERS

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DISREGARD of certain fundamental principles in the treatment of inflammatory lesions of the stomach and duodenum leads to results in many instances which may cast into disrepute measures which, if properly used, have proved valuable. In the maze of conflicting reports in medical literature, one is impressed with the sincerity of those observers who advocate different procedures and the tolerant attitude which is exhibited universally in the attempt to obtain a higher percentage of satisfactory results.

A satisfactory result should not be expected in all cases, even when those measures which have proved their worth are applied correctly. One reason for this is the infinite number of extraneous factors in individual cases which are not completely understood. Failure to obtain satisfactory results in all cases does not justify wholesale condemnation of all surgical procedures for peptic ulcer. There is a tendency among physicians and surgeons, however, to disregard the large majority of patients who have obtained satisfactory results from surgical procedures and to consider only the unfortunate and significant minority of cases in which secondary or recurrent ulceration has occurred or in which a good functional result has not been obtained. As a consequence, a tremendous number of articles have emphasized the problem, have contributed to the growing prejudice against surgical treatment, but have offered little toward its solution. A cooperative plan of attack between internist and surgeon has produced remarkable advances in the management of peptic ulcer and should reduce markedly the number of failures.

INDICATIONS FOR SURGERY

Gastric Ulcer.—The relationship between benign gastric ulcer and carcinoma of the stomach is highly controversial. Of significance is the fact that in a large number of cases of carcinoma of the stomach the history is suggestive of peptic ulcer and indicates that symptoms have been present for a period of years. Of particular significance to the patient is the fact that a small percentage of lesions which seem both roentgenologically and clinically to be typical benign gastric ulcers may prove on microscopic examination to be malignant lesions. On gross examination, the pathologist is frequently uncertain as to the exact nature of the lesion, and obviously the gastroscopist would be subject to the same limitations.

From a practical standpoint, therefore, a gastric ulcer should be considered potentially malignant, and in most instances operation should be advised. Under exceptional circumstances, an attempt may be made to treat the ulcer conservatively, but the failure of such a lesion to show definite improvement on roentgenologic examination in not more than two weeks is an adequate indication for surgical intervention. The improvement demonstrated roentgenologically should be accompanied by complete relief from the symptoms of ulceration and absence of occult blood on repeated examinations of the stools. Clinical improvement alone is insufficient to rule out the presence of a malignant ulcer, for the inflammatory reaction associated with such an ulcer may respond to the medical management and create in this manner a false sense of security. If the ulcer exhibits this evidence of healing, conservative treatment may be carried on safely for an indefinite period provided that a competent roentgenologist has the opportunity to determine the status of the ulcer at intervals which should not exceed two weeks. That a small ulcerating lesion of the stomach may disappear completely as determined by competent roentgenologists only to reappear within a few weeks and prove to be malignant at operation has been stressed and is a fact worthy of serious consideration.

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Not infrequently, a lesion is situated so close to the pylorus that its exact nature cannot be determined. Usually, such a lesion will produce some obstruction to the outlet of the stomach and the question of advisability of exploratory operation is answered easily. Intractable pain, particularly pain which extends to the back, may necessitate surgical intervention for relief and as a precautionary measure against perforation. The occurrence of hemorrhage from a gastric ulcer produces a situation which is similar in many respects to that which is produced by hemorrhage from a duodenal ulcer. This will be considered in the comment on the latter lesion.

Uncomplicated Duodenal Ulcer.—Surgical intervention for any disease may be advised to relieve symptoms or to protect the patient as well as possible against illness in the future. Because an ulcer of the duodenum rarely if ever is malignant, surgical treatment of an uncomplicated duodenal ulcer is never urgent. In many instances, the ulcer apparently heals and remains healed if a proper regimen is followed. Under ordinary circumstances, every effort should be made to control the ulcer in this manner; however, if the degree of disability is great in spite of treatment or if the patient cannot carry on for a reasonable time because of occupational or economic reasons, operation may be advised.

Complicated Duodenal Ulcer.—The most common complications of a duodenal ulcer other than acute perforation are obstruction, hemorrhage, and the tendency to penetrate the wall of the duodenum as evidenced by intractable distress. Under ordinary circumstances, the occurrence of one or more of these complications warrants surgical intervention, although individualization is essential and arbitrary rules of conduct should not be followed strictly. Pyloric obstruction may be noted on roentgenologic examination in a case in which clinical evidence of such a condition is lacking. Surgical intervention before marked obstruction occurs will prevent the development of the great thickening and distention which result when the stomach attempts to empty itself against vigorous peristaltic action.

Repeated hemorrhage usually would justify an exploratory operation. In advising this procedure a physician must not lose sight of the fact, however, that the source of the hemorrhage may be diffcult to determine and that hemorrhage may recur infrequently in spite of the removal of a lesion which has been incriminated as the source of the bleeding. The occurrence of a mild degree of hemorrhage on one occasion in the absence of other symptoms is insufficient evidence on which to advise surgical intervention. However, if hemorrhage recurs in spite of every precaution, including rigid medical management, operation should be advised. Repeated hemorrhage will produce varying degrees of anemia, which may be extremely difficult to correct.

Although hemorrhage from a duodenal ulcer is rarely of such proportions as to be fatal among patients in the younger age groups, the uncertainty creates an extremely bad mental situation for the patient. An operation will protect a large percentage of such patients from the period of incapacitation which invariably accompanies the hemorrhages. Among patients who are more than 55 years of age, the mortality rate from hemorrhages increases remarkably and a fatal outcome occurs in approximately a third of such cases. Serious consideration should be given to the advisability of surgical intervention for protection of patients in this age group against further hemorrhage.

The tendency to perforation is usually made manifest by intractable pain and by roentgenologic evidence of the formation of a crater, particularly if this is associated with an accessory pouch. Extension of pain to the back is suggestive of a penetrating lesion on the posterior wall of the duodenum. Hemorrhage may occur in association with a perforating lesion in spite of a widespread impression that such complications do not coexist.

OPERATIVE PROCEDURES

Gastric Ulcer.—It is not my purpose to describe operative technique but rather to consider broad principles in the surgical management of benign ulcerating lesions of the stomach and duodenum. In most instances an attempt should be made to remove a gastric ulcer in as safe a manner as possible. If this is accomplished by local excision, gastro-enterostomy also would be performed in order to assist in overcoming the inevitable interference with gastric motility that will be produced by the excision of the ulcer. In certain instances, a midgastric resection may be considered because of the extent of the lesion, but the end results of such operations are not too satisfactory. Removal of the greater portion of the stomach is preferable, and the adjacent lymph nodes should be removed if there is any indication that the lesion is malignant.

It may not be possible to determine accurately on gross examination whether the lesion is malignant or benign in certain cases. The gross appearance and size of the lesion, the absence or presence of free hydrochloric acid in the gastric contents, the history and general condition of the patient in such cases should be considered carefully if resection is going to be extremely difficult. The risk of resection may be greater than the possibility of malignancy. In most instances, irrespective of the location of the lesion, local excision for microscopic examination can be accomplished by proper mobilization of the stomach.

Rarely is there any excuse for performing total gastrectomy for a benign gastric ulcer on the assumption that the lesion was malignant.

Duodenal Ulcer.—The surgical procedures that have been advocated for duodenal ulcer depend on many factors, chief of which are the presence or absence of complications, the age and sex of the patient, the chronicity of the lesion, and the amount of total and free acid in the gastric contents. If the patient is young, if there are no complications, and if the values for the total and free hydrochloric acid in the gastric contents are relatively high, the patient usually should be treated by conservative local excision of the ulcer with plastic closure of the defect at the outlet of the stomach or by radical resection of a portion of the stomach. Any attempt under these circumstances to follow an intermediate course by performance of gastro-enterostomy will result in a relatively high incidence of an ulcerating process in or near the anastomosis.

A patient who is more than 50 years of age, who gives a history suggestive of the presence of ulcer for a long period, who has evidence of obstruction to the outlet of the stomach, and who has a relatively low value for the free and total hydrochloric acid in the gastric contents is usually considered a favorable prospect for operation and is a good candidate for gastroenterostomy. Between these two extremes are many patients who may not be classified in any particular category. The general make-up of the patient, his economic condition, the likelihood that he can and will follow advice, the relative risks of various procedures as compared to the possibility of a satisfactory result from conservative management must be considered and from these factors an attempt must be made to reach an honest opinion as to which procedure offers the most.

Much interest has been focused recently on use of gastric neurectomy or vagotomy in the treatment of duodenal ulcers, benign gastric ulcers, and those that occur near the stoma following any type of gastrojejunostomy. Results of this procedure have been inconsistent as reported by numerous investigators. It would seem that insufficient time has elapsed to justify definite statements and that one should maintain an open mind until adequate evidence has accumulated. In my experience unequivocal acceptance of the procedure at this time for use primarily either alone or in conjunction with other procedures is not warranted. Evidence has accumulated that the procedure of gastric neurectomy may prove to be beneficial in those patients in whom an ulcerating lesion has developed near the stoma in spite of an adequate resection.

Advances which have been made in the medical management of duodenal ulcer have decreased the number of patients who are favorable candidates for operative treatment. Advances also have been made in the surgical management of duodenal ulcer, and the results, as shown in large groups of patients, are encouraging. This is particularly noteworthy when it is considered that operation is not infrequently a last resort and is employed only after medical management has failed. For this reason, it is to be expected that the prospects of a satisfactory result from surgical treatment are not good for a relatively higher percentage of patients who come to the surgeon now than who came formerly. A true impression of the favorable results of operative treatment is not possible when the emphasis is placed, as it is so frequently, with such force on the unsatisfactory rather than on the satisfactory results.

Isolate Colds, Doctor Advises

Cold sufferers should keep their colds to themselves by staying away from other people, advises Dr. Donald A. Dukelow, Chicago, writing in the October issue of *Today's Health*.

Dr. Dukelow, consultant in health and fitness for the Bureau of Health Education of the American Medical Association, points out that with the approach of the season of rapid temperature changes, frequent wet feet or wet clothes, and increased exposure to infection in closed rooms, the risk of colds increases.

"Most of us take a cold in our stride and go about our work just the same," he writes. "Maybe we growl a bit and feel rather nasty, but we think we can get by and it will soon wear off."

He emphasizes that anyone who goes to the office or sends a child to school with a fresh cold is a public nuisance, as the victim of cold needlessly exposes countless persons to an infectious disease that causes the loss of more man hours than any other.

Although to the first victim a cold may be only a cold, those whom he exposes may develop pneumonia or have an allergy or chronic sinusitis flare-up. And, Dr. Dukelow adds, with efficiency at a low level during an acute cold, the benefits from working are far overbalanced by the risk incurred.

"From all points of view—public health, personal health and your own public relations with your associates—the important factors in the care of a cold are to stay home, be quiet, make yourself as comfortable as possible and keep your cold to yourself."

INDUSTRIAL HEALTH FELLOWSHIPS

The Institute of Industrial Health of the University of Cincinnati is accepting applications for a limited number of fellowships for qualified candidates who wish to take a three-year graduate course to qualify them for the practice of industrial medicine. Any registered physician who is a graduate of a Class A medical school and who has completed satisfactorily two years of residency, including internship, in a hospital accredited by the American Medical Association, may apply.

Requests for additional information should be addressed to the Institute of Industrial Medicine, College of Medicine, Cincinnati 19.

TOXOPLASMOSIS

Clinical, Epidemiologic, and Laboratory Aspects

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ALTHOUGH the pathogenicity of Toxoplasma for lower animals has been recognized for many years, toxoplasmosis as a distinct nosologic entity in human disease has been established only within the past ten years. Wolf and his associates[26] reported the first experimental transmission of human toxoplasmosis to animals in 1939. They not only demonstrated protozoan parasites of typical morphology in the tissues of this first proved incidence of infantile toxoplasmosis but isolated the organisms from a large number of rabbits and mice injected with human brain tissue. After the establishment of a causal relationship between Toxoplasma and congenital encephalomyelitis in the newborn, these parasites also were noted to produce an acute encephalitis in childhood[14] and a spotted fever-like syndrome associated with pneumonitis in adults.[10]

The increasing occurrence of proved cases of human toxoplasmosis in the United States and elsewhere, together with reports of the results of serologic tests with serums from normal persons[4] and from those with a variety of morbid conditions,[13] emphasizes the increasing medical importance of this parasitic disease.

Soon after Toxoplasma in North America was first demonstrated by Sabin and Olitsky,[18] a systematic study of toxoplasmosis revealed many features which the disease holds in common with those caused by certain of the filtrable viruses, particularly regarding pathogenesis, cultivation, immunity, and other host-parasite relationships.

Despite an increasing number of reports relating to toxoplasmosis, much remains to be learned about the clinical, epidemiologic, and laboratory features of the disease. Since the literature relating to toxoplasmosis has been adequately reviewed by Sabin,[16] by Callahan and his colleagues,[4] and more recently by Binkhorst,[3] no attempt will be made in this report to cover all aspects of the problem. Rather emphasis will be placed on the clinical features and diagnosis of the disease.

CLINICAL MANIFESTATIONS

Since the recognition of the first proved case of toxoplasmosis in the Dallas area by Levin and Moore,[9] a diagnosis of toxoplasmosis has been established in at least 15 additional cases, thus affording an opportunity for studying this clinical entity in its various aspects.

The affinity of Toxoplasma for many different organs and tissues produces a protean clinical pattern. These protozoan parasites have been encountered in the central nervous system, heart, eyes, lungs, skeletal muscle, pituitary gland, liver, spleen, lymph nodes, kidneys, skin, and so forth. It would appear, however, that they have the greatest affinity for the central nervous system of infants and children, the clinical syndrome in older age groups having been largely extraneural although exceptions have been noted. The recognized types of toxoplasmosis include congenital encephalomyelitis and chorioretinitis in infants, acute encephalitis in older children, a spotted fever-like disease in adults, and latent infection in children and adults detectable by appropriate laboratory methods. Most of our knowledge today relates to the infantile form of the disease in which the most consistent clinical features are hydrocephalus, chorioretinitis, cerebral calcification, and convulsions. The occurrence of this tetrad of signs and symptoms should suggest toxoplasmosis, and the clinical diagnosis should be verified by appropriate laboratory tests, which will be discussed later.

The extensive granulomatous inflammation accounts for the clinical manifestations and the neural and mental defects and frequently results in microcephaly and anomalies of the eyes. The chorioretinitis has several features almost pathognomonic of toxoplasmosis: the lesions are usually large, bilateral, and frequently multiple and generally involve the macular areas. Many patients present retinal involvement of only one eye, although the other eye frequently shows atrophy of the optic nerve. Also, the focal lesions may spare the macular region. Intracerebral calcification may be seen roentgenographically in scattered areas of irregular shape and density. The lesions are distributed throughout the cerebral hemispheres, often being more numerous posteriorly and occasionally outlining the lateral ventricles because of the subependymal location of many lesions. The frequency with which calcified lesions are demonstrated varies considerably; in our series such lesions occurred in less than half of the cases, although other authors report a much higher incidence.

It is of interest in this connection that positive serologic tests for toxoplasmosis have been observed

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in children with psychomotor disturbances with or without hydrocephalus associated only with cerebral calcification or chorioretinitis.[15] Hydrocephalus occasionally is due to aqueduct stenosis produced by ependymal lesions. However, more often the ventricular dilatation is merely compensatory and a result of the necrotic cerebral lesions which lead to loss of substance. In these cases hydrocephalus usually is associated with microcephaly. It has been suggested that anencephalus also might be caused by these protozoan parasites.[15]

Visceral signs and symptoms of the congenital form of toxoplasmosis may include pneumonitis, myocarditis, hepatomegaly, splenomegaly, and jaundice. Although this form of the disease is usually fatal, a number of patients develop a chronic illness which may persist for many years, and cases have been reported in which there was apparent recovery. The fact that mothers who have given birth to infants with congenital toxoplasmosis give no definite history of illness suggests that mild, subclinical, and even inapparent infection with Toxoplasma may occur. In support of this is the fact that specific Toxoplasma-neutralizing antibodies are often detected in the serums of the mothers of affected children[1, 4, 13, 15] although it must be recognized that occasionally other morbid conditions associated with Toxoplasma and their neutralizing antibodies are encountered.[13, 15] The presence of Toxoplasma-neutralizing antibodies in the serum of the mother in certain instances would suggest prenatal origin of the disease. In a few cases hydrocephalus was known to have existed in utero. In others, extensive lesions of the brain and retina were present at birth or in the first few days of life. Again, microphthalmos may be evident and convulsions may begin as soon as the second day after birth. Other evidence for prenatal origin of the disease is the extent of lesions as determined by histopathologic study. In 1 case, which will be reported elsewhere, remnants of aberrant hyaloid vessels could be explained only by onset of the chorioretinitis in early fetal life.

Toxoplasmic encephalitis in children is a form of acquired toxoplasmosis.[14] The lesions are much milder than those observed in the congenital form of the disease, suggesting that fetal tissues, particularly of the central nervous system, are more vulnerable to this protozoan than are tissues which already have developed. However, acquired toxoplasmosis producing symptoms simulating Rocky Mountain spotted fever and atypical pneumonia may occur in adults.[10] Patients with acute, acquired toxoplasmosis may thus present neurologic symptoms, as evidenced by encephalitis, and visceral signs and symptoms, as evidenced by pneumonitis, exanthemas, and even enteritis.[21]

The existence of a latent form of the disease in both children and adults has been demonstrated by a number of investigators through the serologic analysis of serum samples for Toxoplasma-neutralizing antibodies[1, 4, 16] selected at random.

DIAGNOSIS

It has been emphasized repeatedly that only one or two of the cardinal manifestations of toxoplasmosis may be present in a patient in whom a diagnosis is established by laboratory procedures. A diagnosis of toxoplasmic infection has been established in some patients who have had neither the characteristic cerebral calcification nor evidence of chorioretinitis. Only recently a diagnosis of toxoplasmosis was established in a patient who presented only two of the cardinal neurologic signs and symptoms: convulsions and minimal hydrocephalus.[20]

It is obvious, then, that highly specific serologic tests are needed to permit accurate laboratory diagnosis of cases in which many of the classic clinical signs are not present. Diagnosis can be established only by certain laboratory procedures which involve demonstration of organisms resembling Toxoplasma in body fluids or tissues, isolation of these protozoan parasites by animal inoculation, and demonstration of specific antibodies. A number of body fluids or tissues obtained by biopsy or at necropsy may be examined directly for structures morphologically resembling Toxoplasma. The organisms may be demonstrated in spinal fluid and in brain tissues stained with Wright's or Giemsa stains. When indicated, pleural or peritoneal fluids and even sputum should be examined for Toxoplasma. Although dissemination of the parasite within the body presumably occurs by the bloodstream, Toxoplasma are found only infrequently in smears of the blood of experimentally infected animals and rarely have been demonstrated in human blood even by animal inoculation. In a recent case Toxoplasma-like structures were accidentally observed in blood films; they proved to be Toxoplasma on the basis of serologic studies of the patient's serum.[20]

Animal inoculation constitutes an important procedure in the identification of these protozoan parasites. When interpreting results of these tests, however, it should be recognized that spontaneous toxoplasmic infection is widespread in animals. In addition, strains of Toxoplasma originally recovered in one animal species occasionally are not virulent for another. According to Sabin,[14] a strain isolated by guinea pig inoculation was practically nonvirulent for mice but became highly virulent for guinea pigs after several passages. Again, on first inoculation, animals occasionally develop an inapparent infection. Consequently, it becomes necessary to resort to the so-called "blind passage" technique involving passage of tissues to a second series of animals. The identity of strains recovered by animal inoculation must be established

on the basis of morphology, pathogenicity for experimental animals, and immunologic relationship to other known strains. At least two serologic tests, the neutralization and complement fixation tests, and possibly a third procedure, the cytoplasm-modification test of Sabin and Feldman,[17] have been devised for the detection of antibodies to Toxoplasma. Both the neutralization test and the complement fixation procedure are known to be of value in determining acute and latent infections. To be sure, patients with chorioretinitis occasionally show no evidence of neutralizing antibodies and this certainly would not rule out toxoplasmic infection.

In the neutralization test, mixtures of toxoplasmic mouse brain suspension and patient's serum are injected intradermally into the skin of a rabbit along with appropriate controls and the resulting lesions recorded on the seventh day (fig. 1). There are a

NEUTRALIZATION TEST WITH L.M. STRAIN OF TOXOPLASMA

Developing lesions traced on the 7th day.

Mixtures injected intracutaneously On the back of the same rabbit	Dilution of Toxoplasma-infected tissue in mixtures			
	1:20	1:100	1:1000	1:10,000
Toxoplasma + Serum of mother of Patient B.H.				
Toxoplasma + Tyrode's solution (control)				
Toxoplasma + serum of patient B.H.			–	–
Toxoplasma + serum of father of patient B.H.				
Toxoplasma + serum of sister of patient B.H.				

○ = Extent of lesion
● = Area of necrosis
– = No lesion

Scale: Centimeters
0 1 2 3 4 5 6 7 8 9 10

FIG. 1. A chart demonstrating a neutralization test with L. M. strain of Toxoplasma, in which developing lesions were traced on the seventh day.

number of drawbacks to the neutralization test, and some workers even have questioned its specificity. Heidelman[7] observed positive neutralization tests in from 10 to 13 per cent of persons without clinical manifestations of the disease and concluded that probably in some the reactions were nonspecific. Ruchman,[13] however, believed that the test is highly specific and may be relied upon particularly in the presence of certain of the cardinal symptoms. In fact, it even has been suggested that neutralization tests be made in every case in which toxoplasmosis is considered. Toxoplasma-neutralizing antibodies, however, are usually present in low titer and are extremely thermolabile. Blood specimens must be handled appropriately if the desired results are to be obtained. If specimens cannot be examined by this test soon after the blood is drawn, it is best that the serum be preserved at low temperatures. Although the procedure is considered more sensitive than the complement fixation test, at least seven days are required before results are available. In addition, for the test virulent Toxoplasma must constantly be maintained in the laboratory by animal passage. Since the results of the complement fixation test are available in a few hours, it is of special value for rapid diagnosis and is receiving considerable attention. The procedure appears to be especially valuable in the diagnosis of acute infections. Studies are now in progress to increase the sensitivity and specificity of the complement fixation test by using antigens prepared from infected chick embryo tissues.

Clinical laboratory data are of little value in the diagnosis of toxoplasmic infection. In active congenital encephalitis, spinal fluid may be xanthochromic with increase in protein and pleocytosis. There may be a decrease in the amount of sugar in the spinal fluid. Actually, too few observations have been made thus far to evaluate clinical laboratory findings.

EPIDEMIOLOGY

Little information is available today concerning the true mode of transmission of toxoplasmosis in the human being. It is recognized that a wide variety of wild and domestic animals and birds are susceptible to spontaneous infection. To establish the existence of geographic foci, there should be additional studies similar to those of Perrin and his associates,[12] in which spontaneous Toxoplasma infection was demonstrated in 8.7 per cent of wild rats trapped in Savannah, Ga. The occurrence of toxoplasmic infection, both apparent and inapparent, in a large variety of animals suggests that they are a source of infection in man.[16]

A number of factors relating to the epidemiology and pathogenesis of the disease remain to be determined. The incubation period of toxoplasmic infection in man is unknown. The frequency of the Toxoplasma-carrier state is not known. How the infection in the mother is transmitted to the child in utero remains to be determined. Similarly, factors which activate a latent toxoplasmic infection are unknown.[11] That infection is transmissible from animals to man is evident in that Toxoplasma of animal and human origin are identical biologically and immunologically. Furthermore, in a few instances illness in an animal may be associated with a human infection. Sabin[14] reported that a domestic cat had convulsions at the time a patient had toxoplasmic infection. In another situation the father of twins with congenital toxoplasmosis, a municipal employee whose work consisted of collecting refuse, handled both live and dead

rats.[6] In certain instances an infection in man was associated with a history of tick or flea bites.[3, 10] The possibility of transmission of infection by biting insect vectors certainly requires further study.

Concerning the mode of transmission of the infection from mother to child in utero, it has been suggested that perhaps parasites enter the fetal circulation by the placenta or that the amniotic fluid may be affected by an ascending infection from the vagina. According to Pinkerton and Weinman,[11] infection might occur during passage through the birth canal. A limited number of attempts have been made to induce congenital toxoplasmosis experimentally. Weinman[23] observed congenital transmission in experimentally infected mice. One instance of possible congenital toxoplasmic encephalitis in the guinea pig was observed in our laboratory, and Adams and his associates[2] recently reported experimental toxoplasmosis in the guinea pig. Cowen and Wolf,[5] however, attempted to produce congenital toxoplasmosis by infecting monkeys during pregnancy and were unsuccessful. The influence of pregnancy on latent toxoplasmic infection has not been investigated. In this regard Johnson and his associates[8] observed recurrent toxoplasmic choroiditis in 3 successive pregnancies. It may prove of importance to attempt detection of inapparent infections in women during pregnancy with the view to preventing the disease in the child.

TREATMENT

No therapeutic agent has been found which will produce a favorable effect on the course of acute infections due to Toxoplasma. Chemotherapeutic studies by Sabin and Warren[19] with a strain of Toxoplasma of human origin have shown that while certain sulfonamides can exert a curative effect on toxoplasmic infection in mice, sulfanilamide only delays death but cannot prevent it. Additional studies with a large number of compounds of known therapeutic effectiveness against various protozoan infections have had no effect on the course of toxoplasmic infection in mice. More favorable chemotherapeutic results were obtained by Weinman and Berne.[24] Sulfapyridine proved highly effective in acute experimental toxoplasmosis in mice. Many of the so-called cured animals, however, remained Toxoplasma carriers. It is pointed out that the sulfonamides cannot be relied on to eradicate the carrier state. In chemotherapeutic studies conduced by Winsser[25] Pentamidine proved effective in vitro but not in vivo. In experiments conducted in our laboratory, Hetrazan diethylcarbamazine, a drug highly effective in the treatment of filariasis, proved completely ineffective in experimental toxoplasmosis in mice. Results with penicillin in experimental toxoplasmosis likewise have been discouraging.

Only limited knowledge is available concerning the action of certain drugs on patients with toxoplasmosis. In active toxoplasmic infection in man, sulfapyridine or sulfathiazole is recommended, although its chemotherapeutic effectiveness has not been adequately evaluated. More chemotherapeutic studies are needed to search for drugs that will penetrate the host cells and destroy the parasites.

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ABSTRACT OF DISCUSSION

DR. SIDNEY R. KALISKI, San Antonio: This paper is timely not only because it disseminates a general knowledge of toxoplasmosis, which is needed, but also because it calls attention so clearly to the protean manifestations of the disease. It would be unfortunate if the more popular concept of the clinical picture in congenital toxoplasmosis, namely chorioretinitis, convulsions, hydrocephalus, and intracerebral calcifications, were to become firmly established as the only basis upon which to presume that the disease probably did or did not exist in a child. In other words, in many cases all or even most of the classic signs and symptoms are not found; it is these atypical cases which will present diagnostic difficulties unless subjected to the kinds of laboratory investigation which the authors describe.

An important concept which deserves emphasis is that a child may have hydrocephalus and at the same time be microcephalic; air studies of the ventricular system must be done to ascertain whether this condition exists. History taking will have to be more detailed, especially with reference to possible contacts with domestic animals which have been shown to be reservoirs of the disease, if cases of the acquired form of toxoplasmosis are not to be overlooked. It would seem that hereafter the physician must inquire not only as to current illness in other members of the family but also about the health of cats, dogs, chickens, and other pets.

As the authors have pointed out, a presumptive diagnosis of toxoplasmosis must be supported by a search for Toxoplasma in tissues and in body fluids, and by neutralization studies. When the congenital type of disease is suspected, the mother and siblings also should be studied for neutralizing antibodies. The concept of latency of toxoplasmic infection in human subjects may present disturbing difficulties in interpreting the immediate significance of a positive neutralization test. As the authors point out, the most conclusive proof would be the recovery in laboratory animals of the Toxoplasma. If Toxoplasma can be isolated simultaneously from a number of different animals inoculated with human material, it must be regarded as strong evidence of the disease in the human from whom the material was obtained.

THE FUTURE OF MEDICINE

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IN considering the future of medicine, I have no desire to pose as a soothsayer or a crystal gazer but rather to relate the impressions I have gained through years of service in medical organizations and in teaching.

Most of the many aspects of medicine are obviously closely related and only a few appear to be isolated phases. Careful scrutiny reveals that probably all phases of the subject are bound together and that that which affects one influences the entire structure.

We as physicians are concerned primarily with the scientific development of medicine, medical education, and the proper relationship of medicine to society. Technical advances without the opportunity for their practical application would be only half a loaf. Medical education limited to schooling and not including provisions for graduate and postgraduate training would be incomplete. All these, however, are in some degree dependent upon the relationship of medicine to society.

We who have devoted our lives to medicine know of its great achievements in preventing and alleviating human ills. The record of advances in the understanding, diagnosis, and treatment of disease is remarkable and gains luster with each passing year. If one looks to the beginning of this century, he cannot but be astonished at the strides made in a comparatively short period. To try to enumerate them would be futile, but briefly they may be stated as the almost complete mastery of scourges such as typhoid, malaria, yellow fever, and plague; the important steps toward the control of tuberculosis, venereal disease, and other communicable diseases; the identification and study of viruses and now the beginning of effective treatment of diseases caused by them; the development of radiology from the primitive roentgen ray to the application of the products of nuclear fission; the development of chemotherapeutic and antibiotic agents; and the extension of surgical procedures into fields of therapy and parts of the body previously considered inaccessible.

We have a justifiable and pardonable pride in these accomplishments and in the desire to minister to mankind which motivates most of the profession and which has wrought a tradition of charity toward our fellow men. We who live medicine, however, may not see it in proper perspective. We may accord it a place of undue importance in the scheme of things. If this be true—and I believe it is—it is not a manifestation of narrow and selfish interests but rather the natural result of devotion to our profession and to human welfare.

It must be recognized that our estimates are not necessarily shared by others and that medicine will never occupy the position in the public mind which it does in ours. Medicine, however, does occupy an important place in an integrated society and, being a part of it, is subject to the stresses and strains of changing environment. In a world as disturbed as the one in which we live those changes may be rapid and violent.

The factors which influence the course of human

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events are many. Some are accidental, others result from the evolution of ideas, and still others are by design. Propaganda may have a temporary importance and may even influence the evolutionary process, but by and large, the progress of evolution is determined by worth-while factors.

We therefore must accept some change as inevitable and must strive to guide the course of events in such a manner that medicine will be preserved. There is no such thing as manifest destiny. Until the future has become history, men can shape its course.

METHOD OF PREDICTION

The only reasonable method of predicting the future is by applying a knowledge of history and by recognizing and interpreting current trends. Any one person's judgment is influenced by his own experience and his personal opinions. In the apparently secure nineteenth century prophesying the future would have seemed easy. The concepts of the era were stable and standards of value seemed well established. The present century already has seen two world wars with consequent dislocations of political, social, and economic systems and thought. The seemingly diminished size of the world, resulting from accelerated transportation and communication, has increased the interchange of ideas; the countries of the world have become more interdependent. Certain nations are striving to establish in other areas ideas and regimes which coincide with their own.

In this country we have passed through a period of almost twenty years of destruction of individual responsibility and of limitation of individual freedom. Until recently regimentation was on the increase and efforts still are being made to extend the process. During the same period the destruction of large fortunes by inheritance taxes, the almost confiscatory level of income taxes, and the diminished returns from safe investments have seriously damaged many of our medical schools and foundations. It is difficult to say whether this is a part of the design of the social planners or only a by-product of their schemes.

RESEARCH AND EDUCATION

There is widespread interest in research in many fields of science. Some discoveries have a direct and immediate bearing upon the practice of medicine. Others appear to be in distantly related scientific fields, but many discoveries which seem to have no practical clinical application today will become accepted methods of diagnosis or therapy in the future.

Government, partially as a result of the war and partially for other reasons, has evinced an interest in scientific development including that which has a direct bearing upon medicine. Congress is devoting large sums of money to research projects. It seems to be the belief of certain Congressmen that a cure for cancer can be purchased for so many million dollars. What will be their reaction when their desires are not realized within what they consider a reasonable period of time?

The expansion of the federal government into the fields of medical research has advantages and hazards. It is scarcely reasonable that the bureaucrats will be willing for long to see grants-in-aid being made to our universities and other institutions without an effort to control them. The Federal Security Administration and the United States Public Health Service have not been noted for their generosity in this regard. Here is a situation which will require constant vigilance. Every effort must be made to prevent the absorption or domination of research by the government, a step which might stifle the scientific development of medicine.

The federal government now proposes to enter the field of medical education by grants-in-aid to medical schools and scholarships for students as embodied in S. B. 1543. These subsidies would have strings attached. We must recognize the importance of this threat to the freedom of medical education. The Supreme Court has ruled that the government may control that which it subsidizes. Medical education must never be permitted to fall under bureaucratic control.

Without government interference medical education will continue to improve unless certain other trends now visible go too far. The change from didactic to clinical instruction began before most of us entered medical school. By that time the "case method" of instruction was well established. Ever since the use of clinical material has increased and the lecture plan of presentation has diminished. The past twenty years brought physiologic methods of thought more and more into prominence and have made structural concepts less important. With increased knowledge and understanding of extracellular and intracellular chemistry and physiology, the physiologic method of thought has taken on new significance. However, there is danger in pursuing such a course too far. At present the tendency is to slight the teaching of structural pathology in certain schools. It can be asked with reason, how can altered physiology adequately be understood unless the interpretation of changed morphology can be improved? The country now suffers from a lack of trained pathologists to staff its hospitals. Where will these men receive adequate training unless university departments continue a real interest in morphology?

Prior to the war there were insufficient places in which to train young men desiring graduate instruction and experience. The war and increased enrollments in medical schools have exaggerated this short-

age of facilities. Hospitals are needed for patient care in some areas, and greater utilization of existing institutions for graduate training is necessary. The accomplishment of this expansion is necessarily a slow process but is under way.

Postgraduate education is slowly improving. Temporarily the needs must be met largely by medical society and hospital staff meetings and by the wider dissemination of journals of high standard. The larger county society units, the state associations, and organizations such as the American Cancer Society and the American Heart Association are extending their activities and will provide more and better postgraduate courses. The universities are gradually recovering from the effects of the war and are expanding their programs.

FUTURE PATTERN

What is the future pattern of the practice of medicine to be?

During the past century the tremendous development of specialization was begun by certain physicians whose special interests were pursued to the point that they acquired more knowledge and greater skill in certain fields than did their fellows. After some time segregation of types of cases in the larger hospitals provided greater opportunity for study and investigation. Specialized graduate and postgraduate training developed, resulting in the formation of special societies for the interchange of ideas to the mutual advantage of physicians with common interests. These societies have multiplied many fold. Specialist colleges were formed and ultimately certifying boards with rigid requirements were developed.

Hospitals gave impetus to the development of specialization and the war added greatly to it. Young doctors in the service saw the advantages given to others who possessed board certificates or fellowships in certain colleges. This experience caused most of them to desire to become specialists rather than to enter general practice.

It is safe to say that there has been overemphasis on specialization. I do not say this to detract in any way from the value of specialization. The specialist is valuable and has a proper place, but a mad rush toward specialization is unwise. If carried to its logical conclusion, it would sound the death knell of general practice.

The general practitioner is and should remain the backbone of American Medicine. The competent, well trained practitioner can and should care for the vast majority of all illness. The trend away from general practice has been recognized by all levels of medical organization. The addresses of the President and President-Elect of the American Medical Association at Atlantic City in 1947 dealt largely with this problem, and since then much has been done to stimulate interest in general practice. Unless these efforts are successful, we shall see a greater maldistribution of medical care throughout the country than now exists. The American Academy of General Practice can play an important part in preventing this eventuality.

The only alternative is the assumption of the function of the general practitioner by the pediatrician and the internist, which might be a satisfactory solution in large medical centers or in groups of physicians associated in practice. An increasing number of such groups in various parts of the country is apparent and the trend may well continue. However, even group practice would not solve the question of rural medical care, a problem of increasing proportions which can be solved only by according general practice its proper position in medicine.

MEDICINE AND THE PUBLIC

It has become increasingly important for physicians to consider carefully the relationship of medicine to the public. We render an important public service, but are we fully meeting our responsibilities? One obligation is to supply the people with medical care of high standard. I believe there can be no question but that we fulfill and shall continue to fulfill this obligation. A second obligation is to treat the patient fairly in an economic sense. Failures of individual physicians to live up to this requirement are not common but when they occur are harmful in the extreme to the profession.

Extending the thought of the individual physician's responsibility to the profession as a whole leads to the consideration of methods for easing the financial burden of serious illness to the patient and his family. We know better than any other group that the expansion of diagnostic and therapeutic procedures has added greatly to the cost of medical care. In certain instances it is catastrophic in its effect. Is it our obligation to assist in solving the problem of the costs of medical care? Probably not; but enlightened self-interest dictates that we do help. The only valid argument for socialized medicine is the unbudgeted and unpredictable cost of medical care. The obvious method of meeting this threat is by expansion of voluntary insurance. The worth of this approach was established by its success in progressively lessening the interest of the people of California in programs such as those sponsored by Governor Warren.

The disadvantages of socialized medicine to both the physician and the public are well known. The inevitable effect of any form of compulsory sickness insurance program thus far proposed would be (1) regimentation of patient and physician alike, (2) limitation of professional and economic horizons, (3) destruction of individual initiative, (4) deterioration of the standards of medicine, and (5) destruction of medicine as we have known it.

Such changes might go as far as those in England. There the physician is a public servant who may be moved about at will by a dictatorial government and who may be told what and where he may practice. Human nature does not change. When restrictions become onerous, force becomes necessary. A nation cannot exist half socialized and half free. The continuous demand of the British government for greater and more dictatorial powers is ample proof of this fact.

Coming at this time, the situation in England is a vivid lesson to the people and the medical profession of this country. Yet forces are continuously at work trying to impose a similar system upon us. Some are actuated by certain ideologies, some by an impractical desire to do good, and some by selfish reasons of political advantage and advancement.

NEED FOR ACTION

How are we to defeat those who seek to destroy American Medicine?

The widespread expansion and improvement of voluntary insurance will deprive socializers of their one potent argument. Improvement of public relations will increase the confidence of the people in the medical profession. In the satisfactory contact of the physician with his patient lies the basis of good public relations; the satisfied patient is not easily converted to socialization schemes.

The influence of the physician upon the public in his own community is enhanced by his interest and participation in community projects. Activity in civic affairs, especially where his training and knowledge are of value, adds to the doctor's prestige and influence. Although we are physicians, we are also citizens with the rights and duties pertaining to citizenship. We should exercise them.

Public information and publicity can be handled best by central organizations such as the state medical associations and the American Medical Association. They must present the case of medicine to the public in an effective and convincing fashion. Every physician can and must be a spokesman in his own community. His friends and neighbors know him and have confidence in him. They will listen to his counsel.

We of medicine must step down from our ivory towers and actively participate in politics. Any drastic change in the practice of medicine requires legislative enactment. We must see that legislators are of such a mind that they will not assist in passing socializing legislation. They must be made to realize that the political force of an aroused medical profession is not to be disregarded.

To defeat our enemies it is essential that we have a unified profession. Success cannot be attained by the effort of a few individuals. There must be sound leadership, and those who have grown old and tired should be replaced by vigorous, younger men with the prospect of years of practice ahead of them. Even with strong leadership, however, victory will come only with cooperation throughout the profession.

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How Health Dollar Is Spent

Only about one-third of the money spent for health purposes goes to physicians in payment for their services. This was one of the conclusions reached in a government survey which was published in the Commerce Department's *Survey of Current Business* for July.

The report covered 1949 and showed that 1.2 per cent of money spent by American families for consumer goods and services goes to doctors of medicine and that 2.06 per cent of the total goes for other health expenses. During the twelve months physicians received $2,267,000,000; in the same period Americans spent $1,391,000,000 on drugs, $105,000,000 on private nurses, $416,000,000 on ophthalmic products and orthopedic appliances, and $1,631,000,000 on private hospitals. The total spent for burial items such as cemeteries, crematories, monuments, and tombstones was $395,000,000, which, according to the survey, just about equals the net amount spent for accident and health insurance. It is almost four times as great as expenditures for private nurses and almost one-half the amount paid to dentists.

Eyes and Headache

Eyes are a cause of headache in 25 per cent of patients, reports a Detroit ophthalmologist in the October 14 issue of *The Journal of the American Medical Association*.

Dr. Albert D. Ruedemann writes that more patients consult medical clinics and oculists because of headaches than for any other single complaint and that probably more medicine is sold for headaches than for any other condition.

"It is the great social excuse for avoiding disagreeable engagements. While it is easy to label the patient neurasthenic or hysterical or just nervous, the headache may be the forerunner of a serious intracranial disease."

Stating that most eyes are overused either from too much use or from use under poor working conditions, he lists as possible victims of faulty eye functioning: (1) the girl with a nervous breakdown, (2) the child who is inattentive, (3) the person in business who has a headache at noon which is relieved by lunch and then recurs about 3 or 4 o'clock, (4) the clock watcher, (5) the student who cannot concentrate, and (6) the convalescent patient who reads in bed and has a headache. These persons may need medical exercises, surgical treatment, glasses, or all three, Dr. Ruedemann suggests.

Public Health Service Grants

A total of $4,708,766 in grants from the U. S. Public Health Service to 144 institutions in thirty-nine states, the District of Columbia, and four foreign countries was recently approved by Surgeon General Leonard A. Scheele, following the recommendations of the National Advisory Health Council at its June meeting. It will permit continued investigation in such fields as pediatrics, physiology, biochemistry, hematology, nutrition, and psychiatry.

CASE REPORTS

RHEUMATOID ARTHRITIS WITH NEUTROPENIA, THROMBOCYTOPENIA, AND SPLENOMEGALY (FELTY'S SYNDROME) WITH IMPROVEMENT AFTER SPLENECTOMY

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FELTY,[3] in 1924, described a type of poly-arthritis in adults characterized by an associated splenomegaly and leukopenia. He reported 5 cases in patients whose ages varied from 45 to 65 years; all had arthritis of the atrophic variety of at least two years' duration; each had an enlarged, nontender spleen; all had a low-grade fever and weight loss; and their leukocyte counts varied from 1,000 to 4,200 per cubic millimeter of blood. In 1932, Hanrahan and Miller[5] reported the effect of splenectomy in a similar patient and classified that patient as having "Felty's syndrome." Craven[1] in 1934 and Fitz in 1935 also reported patients who had splenectomies. Fitz[4] in his paper commented on the end results of Craven's case, in which death occurred fourteen months after surgery as a result of inanition and terminal pneumonia, and of Hanrahan and Miller's patient, who died sixteen months after surgery.

Talkov, Bauer, and Short[12] in 1942 presented a critical review of the cases previously reported as "Felty's syndrome," pointing out the pitfalls of such a diagnosis. They thought that in 10 of the 14 cases reviewed the presence of an unassociated accompanying disease could explain the splenomegaly and leukopenia. From their experience the more common diseases to be searched for should include "chronic liver disease, pernicious anemia, leukemia, hemolytic anemia, amyloid disease, various acute and chronic infectious, and malignant lymphoma." They also noted that moderate leukopenia was common in rheumatoid arthritis but that strictly pathologic counts (less than 2,000 leukocytes per cubic millimeter of blood) are seldom encountered. They concluded, as had Curtis and Pollard[2] before them, that Felty's syndrome was a misnomer and was merely a chance variant of ordinary rheumatoid arthritis. Steinberg[10] in 1942 reported 3 cases. He believed that splenectomy should be done only after all conservative measures had failed. One of his patients suffered from malnutrition and inanition after surgery although there was some improvement in the blood count. The other 2 did fairly well under medical management. He observed that a hyperplastic bone marrow was a common observation in rheumatoid arthritis.

It would appear that with present knowledge it is impossible to state that there is definitely a form of rheumatoid arthritis in which the spleen and bone marrow are more than ordinarily affected. Necropsy reports from 2 cases of Felty's syndrome[7, 13] have failed to show any specific pathologic entity. Whether or not improvement in the blood picture and/or decrease in splenomegaly will occur with the newer antirheumatic drugs (ACTH and cortisone) remains to be demonstrated. A trial in such instances would certainly be of interest.

We believe that in selected cases splenectomy should be seriously considered, but proper selection of such patients for surgery presents some difficulties. The confusion which has existed has been clarified considerably by the work of Wiseman and Doan. They reported in 1939 the first case of leukopenia in which overactivity of the splenic macrophages for leukocytes was recognized.[15] Their patient was immediately benefited by splenectomy, and a follow-up report by the same authors[16] in June, 1942, three and one-half years later, showed persistence of this improvement. Four other cases with varying degrees of anemia and thrombocytopenia, in addition to the leukopenia, are included in this later report. In each instance supravital staining of the splenic pulp showed marked increase in phagacytosis for red and white cells. All of these blood disturbances were corrected by splenectomy. None of these 5 patients had rheumatoid arthritis. Such hypersplenism has been likened by these authors to the findings encountered in congenital hemolytic icterus and thrombocytopenic purpura, in both of which conditions splenectomy is well recognized to be specific. They offer no explanation for this at times sudden pathologic change in the splenic function, but outline the following criteria for diagnosis of "splenic neutropenia":[15]

1. Clinical—splenomegaly; occasional purpura (depends on the degree of associated thrombocytopenia);

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occasional oral ulceration (depends on acuteness and severity of neutropenia).

2. Hematology—bone marrow: hyperplastic for myeloid series and if hemolytic anemia is pronounced for erythroid series, no abnormal cells present, not leukemic; blood: marked specific neutropenia, anemia when present is macrocytic hyperchromic type, reticulocytosis if anemia is definite, increased indirect van den Bergh reaction depending on the grade of anemia, variable thrombocytopenia.

The history and findings in our patient, we believe, serve as an excellent example to bridge the gap between what has previously been described as Felty's syndrome and what is, in this instance, hypersplenism occurring in a patient with a long standing rheumatoid arthritis.

TABLE 1.—*Blood Picture in an Adrenalin Test for Splenic Function.*
(Counts are per cubic millimeter of blood)

	Platelets	White Blood Cells	Eosinophils	Stab Forms	Segmented Forms	Lymphocytes	Monocytes
Before adrenalin administered	16,000	2,400			2	98	
5 min. after	23,000	5,000	1	2	11	84	2
10 min. after	25,000	2,800	1	1	14	84	1
15 min. after	29,000	2,600		4	3	88	5
30 min. after	17,000	1,650	1	1	9	87	2

CASE REPORT

Mrs. H. E., a 39 year old married woman, was admitted to the hospital December 10, 1949. She had been referred by her local physician, who had discovered an abdominal mass during a routine examination for a respiratory infection which she had had for about two weeks.

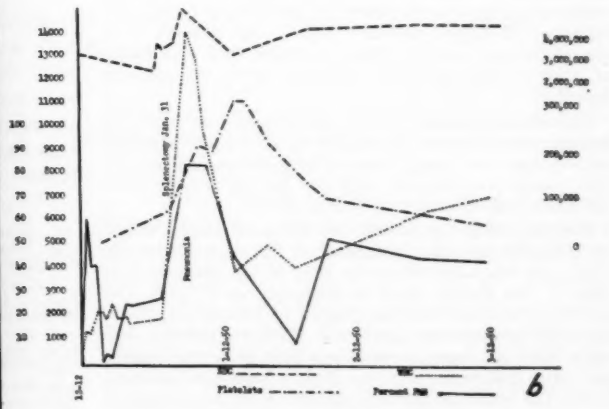
Twenty-one years previously, six months after the delivery of her first child, she developed rheumatoid arthritis. Two subsequent pregnancies had no effect on the course of her arthritis. This condition continued up to the time of admission although there was little noticeable activity for six or seven years prior to her admission. Considerable deformity had resulted and was manifested by muscular atrophy and deformity of the wrists, elbows, fingers, feet, knees, and hips. She had been unable to walk for sixteen years. As might be expected, she had had a variety of treatments, but at no time had she received any gold salts. Menstruation had been stopped ten years previously by roentgen ray in an effort to benefit the arthritis.

Seventeen years before admission, a physician told the patient that she had a floating left kidney. Three years before admission the patient noted a large mass in the left side of her abdomen which extended to just below the level of her umbilicus. This was not painful and did not bother her much. It had not changed in size in the past three years.

About three months prior to admission she noticed that she was beginning to feel "weak and lightheaded." Her appetite was poor and she was losing weight. She also had a low-grade fever varying from 99 to 101 F. daily. In the month before admission she developed several pustular lesions on the arms and hands. Her teeth had been carious for several years but her dentist refused to extract them because of a known bleeding tendency. On two admissions to the hospital in 1946 she had transfusions to correct a moderate anemia. Leukocyte counts showed a moderate leukopenia at those times. There were no other significant data in the past or family history.

Physical examination revealed a thin, malnourished, white woman with typical rheumatoid deformities of the extremities (fig. 1a). There were a few subcutaneous nodules over and below the elbow on the right forearm. On the skin of the arms and forearms scattered pustular lesions in various stages of healing were noted. There were a few movable,

FIG. 1a. Roentgenogram showing typical rheumatoid deformities of the extremities in a case of Felty's syndrome.



1b. Graph showing the blood picture at intervals before and after a splenectomy in the case of Felty's syndrome. Splenectomy was performed December 31 instead of January 31 as indicated on the chart.

firm, nontender nodes in the posterior cervical group and a similar one in the left axilla. The heart and lungs were not remarkable. The entire left upper quadrant of the abdomen was filled with an enormously enlarged, slightly tender spleen, which extended approximately 3 cm. below the umbilicus. The liver was not palpable. The right kidney was palpable in the flank.

Because upon admission the total white blood cell count was 750 per cubic millimeter of blood with 26 neutrophils, the patient was placed on prophylactic procaine penicillin, 300,000 units twice daily. The sedimentation rate was 35 (Cutler) and urinalysis revealed no abnormalities. Phenolsulfonphthalein excretion was normal. The icterus index was 8, and a van den Bergh test showed .7 mg. of bilirubin per 100 cc. of serum. A bromsulfalein test revealed no dye retention, and a cephalin flocculation test was 3 plus in twenty-four and forty-eight hours. Blood proteins totaled 8.1 Gm. per 100 cc. of blood with 3.8 Gm. of albumin, 3.5 Gm. of globulin, and .8 Gm. of fibrinogen. Uric acid was 4.0 mg. per 100 cc. of plasma, and chlorides were 551 mg. per 100 cc. of plasma. A Congo red test revealed 39 per cent dye retention in one hour. Blood urea nitrogen was 11 mg. per 100 cc. Bone marrow examination showed moderate hyperplasia of all elements except the erythroblastic series, which were noticeably hyperplastic at normoblast level. The results of an adrenalin test are shown in table 1. The red blood cell count on admission was 3,100,000 per cubic millimeter of blood with 7.8 Gm. of hemoglobin per 100 cc. of blood. It remained at this level preoperatively. The white blood cell count varied from 750 to 2,250 per cubic millimeter of blood with a leukocyte variation of from 2 to 42 per cent. The lowest granulocyte count was 2 per cent of 1,100 total white blood cells on December 19, 1949. Red blood cell fragility was normal; platelet counts varied from 16,000 to 60,000 per cubic millimeter of blood preoperatively.

Roentgen-ray examination of the abdomen revealed the left upper quadrant mass and was otherwise negative. Roentgenograms of the bone showed findings typical of atrophic arthritis (fig. 1a). A chest plate was normal.

These studies appeared diagnostic of hypersplenism with panhematopenia. On December 31, 1949, a splenectomy was performed. The spleen measured 18 by 19 by 10 cm. in situ and weighed 800 Gm. after blood was expressed. Two small accessory spleens were also removed. There was no significant difference in formed elements of the blood obtained from the splenic artery and that from the splenic vein. Transfusion of 1,500 cc. of whole blood was given during the operative procedure.

Immediate examination of the splenic pulp with supravital staining showed marked increase in the activity of the splenic macrophages with phagocytosis of both red and white cells. This picture was identical with that reported by Wiseman and Doan and illustrated in their article.[15]

Postoperatively, the patient's red blood cell count climbed to 5,050,000 per cubic millimeter of blood on January 6, 1950, and was 4,600,000 at the time of her discharge January 12. The platelet count on discharge was 215,000. The postoperative course was complicated by pneumonia, which was easily controlled by antibiotics. With this infection her white blood cell count increased to a little more than 14,000 per cubic millimeter of blood with a leukocyte count of 8,500. The blood picture is illustrated on the accompanying graph (fig. 1b).

In the four months since the splenectomy there has been a gain in weight of 11 pounds, the red blood cell count and hemoglobin have returned to normal levels, and the patient looks and feels better than she has for many months and remains afebrile. The white blood cell count has also been consistently normal for the past three months. The low level of the platelets is disappointing, but there has been to date no evidence of a bleeding tendency.

DISCUSSION

It would seem likely that hypersplenism might occur as a complication of a number of pathologic states in which splenomegaly is present. Since splenic enlargement has been reported in from 1 to 21 per cent of cases of atrophic arthritis,[14] it is probable that in a rare case hypersplenism can be demonstrated. Where significant improvement has resulted from splenectomy, it has been possible to demonstrate pathologic phagocytosis by the splenic macrophages with supravital staining of the freshly excised splenic pulp.[6, 8, 9, 15, 16] Conversely, where such phagocytosis has not been present, the results of splenectomy have either been unsatisfactory or equivocal.[1, 5, 10] Supravital staining, therefore, should be a routine procedure after every splenectomy in order to estimate better the prognosis as well as to classify properly these patients. We have had no experience with splenic puncture, but in a doubtful situation supravital staining of specimens obtained by puncture biopsy might well answer the question as to whether or not the spleen should be removed.

SUMMARY AND CONCLUSIONS

A case of splenomegaly and panhematopenia occurring in a patient with rheumatoid arthritis is presented. The blood picture has improved significantly since the splenectomy but there has been no change in the patient's arthritis.

Findings in the bone marrow, peripheral blood, and supravital stain of the splenic pulp were typical of those encountered in hypersplenism. Indications for splenectomy have been reviewed.

Hypersplenism can be expected in a rare patient with rheumatoid arthritis and splenomegaly. We believe that Felty's syndrome is a chance variant of rheumatoid arthritis, but, like Sturgis, we think that the term should be continued because it focuses attention on a condition which might otherwise be overlooked.

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1216 Pennsylvania Avenue.

ABSTRACT OF DISCUSSION

DR. C. COLLOM SMITH, Waco: In studying this condition I read all of the case reports and discussion to which I had access. Practically all of the articles bring out the controversy of whether Felty's syndrome of rheumatoid arthritis with neutropenia and splenomegaly is a distinct disease entity or is a variant of rheumatoid arthritis with hypersplenism. There are good arguments for both sides. The strongest argument for the disease entity, I believe, is the relative frequency with which the manifestations of hypersplenism (a rare condition in itself) turns up associated with the picture of rheumatoid arthritis. However, I must go along with Drs. Fershtand and Holsapple and most other authors on the subject that the condition is a variant of rheumatoid arthritis associated with hypersplenism. We do not know what causes hypersplenism—a condition wherein the normal splenic function of destruction of old, worn-out cellular elements of the blood is misdirected to destroying or trapping normal cellular elements of the blood to the extent that there exists a deficit of certain or all of these elements in the circulating blood. Frequently the pathologic process is set up in what appears to be a primary condition, but it also occurs in other definite pathologic states of the spleen—Hodgkin's disease, hemachromatosis, and a few others.

Once as a resident physician I was on the private service of a teaching hospital where we made a diagnosis of Felty's syndrome. The patient had rheumatoid arthritis, leukopenia, anemia, and a grossly enlarged spleen. The spleen was removed, and from the microscopic section the pathologist gave a pathologic diagnosis of Boeck's sarcoid of the spleen. I saw a man once who enjoyed relatively good health for about a year following the removal of an enlarged spleen for what was thought prior to operation to be hypersplenism, but which turned out to be an aleukemic phase of chronic myelogenous leukemia.

An enlarged spleen is certainly not foreign to atrophic arthritis. It is a typical finding in Still's disease and is seen in from 10 to 20 per cent of the cases of adult type rheumatoid arthritis. So, it appears that in a limited number of these enlarged spleens hyperfunction develops and hypersplenism results along with the joint disease.

Dr. Roy Kroche of Birmingham set down definite criteria for the diagnosis of hypersplenism: (1) a spleen that is clinically enlarged (the single exception being found in some cases of essential thrombocytopenic purpura); (2) depleted cell values in the blood, including neutropenia, thrombopenia or anemia, or various combinations of these; (3) demonstration that the bone marrow production is not impaired; and (4) demonstration of splenic over-activity by the epinephrine test. He recommended, and most of us agree, that splenectomy should follow the diagnosis.

GENERALIZED LATE CUTANEOUS SYPHILIDS

Report of a Case

JOHN H. HARRIS, M.D., and LEONARD MELTZER, M.D.,
Houston, Texas

LATE cutaneous syphilids were seen frequently in most large hospital clinics twenty to thirty years ago. During the past fifteen years such manifestations of the disease have become so infrequent that they are looked upon as rarities, and the medical student who sees a few such cases during his undergraduate study can consider himself fortunate.

The occurrence of a generalized late syphilid is so infrequent that we were unable to discover any report of such a case in the literature for the past twenty years. This decrease can probably be attributed to the tremendous increase in routine serologic examinations; to the increased awareness of syphilis by physicians in all branches of medicine; to the increased publicity given syphilis by the press, radio, and public health bureau; and mostly to modern antisyphilitic therapy.

This case is reported not because late cutaneous syphilids are rare but because it is unusual to see a late cutaneous syphilid which is bilateral and symmetrical. Modern syphilologists do not recognize sharp chronologic division between late secondary and tertiary syphilis. By late cutaneous syphilids is meant those lesions appearing three years or more after the initial infection. Such an eruption may not appear for twenty or thirty years.

Late cutaneous syphilids are divided into (1) gumma, (2) nodular, and (3) nodulo-ulcerative.

Read before the Section on Medicine, State Medical Association of Texas, Annual Session, San Antonio, May 4, 1949.

Morphologically these lesions are described most often as single, less frequently as multiple, and almost always as asymmetrical.

Gummas may occur as isolated single lesions or as disseminated arciform lesions resembling the nodular type. They may occur on any part of the body. As a rule, gummas are single, occurring more frequently on the lower legs. The lesion begins as a small nodule. The central portion soon becomes necrotic, forming a punched-out ulcer with steep sides. The gumma must be differentiated from epitheliomas, tuberculous ulcers, varicose ulcers, and all granulomas. Epitheliomas usually show a rolled, waxy border, not seen in gummas. The course of an epithelioma is usually slow, from two to ten years, while that of a syphilid is from two to three months. Varicose ulcers have undermined borders while those of gummas are usually steep.

Nodular syphilids are much more common and more characteristic than gummas. They usually occur as single lesions but may be multiple and are always arciform or circinate. The borders are made up of individual nodules: the nodules are sometimes scaly, and the borders generally hyperpigmented. Since these lesions spread centrifugally, an active border and a central atrophy are characteristic of late syphilids. Nodular syphilids must be differentiated from psoriasis, mycosis fungoides, and tinea corporis.

The nodulo-ulcerative type of syphilid is similar to the nodular type except that some of the nodules break down to form ulcers, which lead to noncontractile scars. The noncontractile scar with the thin, tissue paper-like skin which follows a tertiary ulceration is not imitated by the scarring of any other cutaneous lesion.

Since the blood Wassermann reaction in late syphilis is frequently negative, the clinical appearance of cutaneous lesions is of great importance in diagnosis.

CASE REPORT

F. S., a white man, aged 63, had a chief complaint of skin trouble. He stated that thirty-five years previously he had had a sore on his penis followed shortly by a body rash. He had received no treatment at the time, but eventually the eruption disappeared.

He had no further trouble until 1941, when he developed on the back of his right leg some "bumps" which soon formed a ring. Similar "bumps" appeared on other parts of his body, also forming rings. These lesions healed only to be followed by new ones so that the patient had active lesions all the time. When he was first seen in the clinic in September, 1948, there were lesions of two weeks' duration on the forearms.

In 1944 the patient discovered a progressive weakness in the right hand and right leg, without numbness or tingling. The weakness had progressed in intensity.

Physical Examination.—The patient was a fairly well developed, fairly well nourished white man who was alert, cooperative, and not acutely ill. His blood pressure was

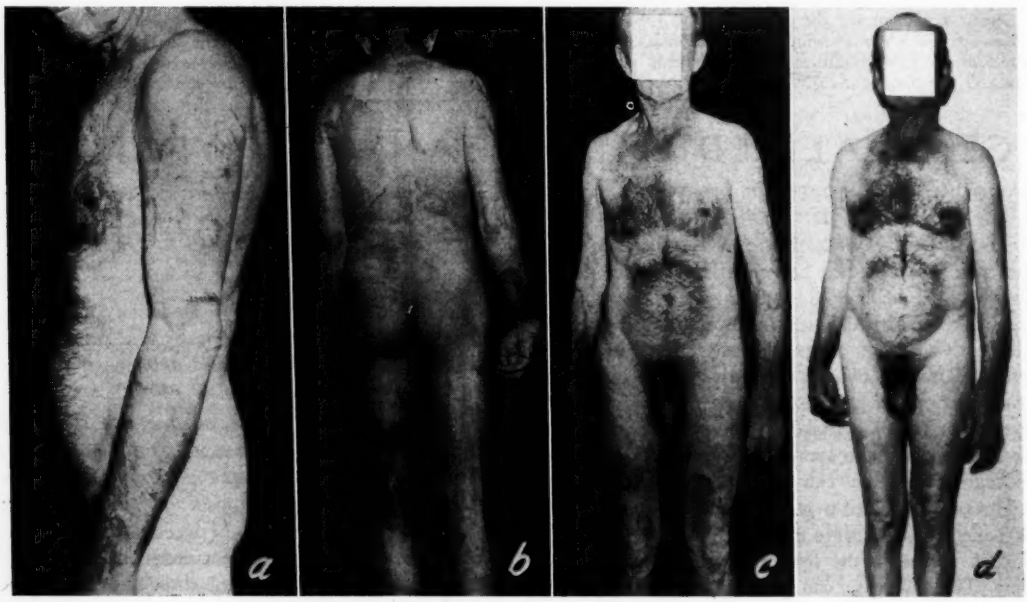

FIG. 1. Photographs of a man with late cutaneous syphilids.

a. A widespread eruption with arciform arrangement of isolated nodules making up ring shaped lesions is evident.

b. This view shows bilateral and symmetrical eruption.

c. The generalization of the eruption is again demonstrated. The lesion in the left popliteal area is a noncontractile scar of a former ulceration.

d. Two months after treatment with 3,000,000 units of penicillin all lesions had entirely disappeared.

180/110, pulse 100, respiratory rate 20, and temperature 100.2 F. The skin was warm and dry. On the chest and on the upper and lower extremities were annular papular and nodular lesions which were erythematous and slightly scaly. Examination of the eyes, including retinoscopic visualization, revealed no abnormalities. The examination of the ears, nose, and throat was negative. The only significant observation on examination of the heart and lungs was a soft systolic murmur over the point of maximal impulse, which was not transmitted. Examination of the genitalia revealed a scar on the right side of the glans penis about 1 cm. in diameter. The epididymis on the right side was enlarged, firm, and nontender. There was no regional nor general adenopathy. There was a flexor deformity of the right hand associated with weakness in the right arm. Measurement of the extremities revealed that the right upper and lower extremities were from 2 to 5 cm. less in circumference than equal points on the left. A neurologic examination revealed a slight slurring of some consonants and a motor weakness of the right side.

Laboratory Tests.—The urinalysis was normal. The hemoglobin was 117 per cent, red cell count 5,600,000 per cubic millimeter of blood, and white cell count 9,400 per cubic millimeter of blood. The differential blood count showed 73 per cent neutrophils, 25 per cent lymphocytes, and 2 per cent monocytes. Nonprotein nitrogen was 42 mg. per 100 cc. of blood. A blood examination for syphilis by the Kahn quantitative method revealed a titer of 1 to 512; a Kolmer spinal fluid reaction was positive 1 to 8; a colloidal gold test read 21000000.

An electrocardiogram showed no evidence of myocardial damage. A roentgenogram of the chest revealed no cardiac enlargement, but there was a calcium plaque in the arch of the aorta. The lung fields were normal. There was a rounded opaque density in the region of the trachea, the nature of which could not be determined from the film.

Microscopic examination of the cutaneous lesions revealed changes compatible with tertiary syphilis.

COMMENT

This case is of interest for the following reasons:

1. The patient was free of any evidence of cutaneous syphilis for twenty-eight years after the initial infection, in spite of not having had treatment.

2. The spirochetes seemed to possess certain tropisms, a point mentioned many times by other authors. It is generally accepted that there is a neurotropic and a vasculotropic strain. This case suggested a cutaneous strain, for here was a man who, although infected thirty-five years previously, had no cardiovascular or central nervous system involvement that could be detected clinically or by laboratory examination.

3. The outstanding point of interest is that this case demonstrated the generalization of a late cutaneous syphilid. Cases with multiple lesions are common, but we have been unable to discover a report of one so widespread.

We are of the opinion that this case was an example of late cutaneous syphilis in spite of the generalization. The features which substantiate this contention are as follows: (1) All lesions were arciform. (2) The borders of all lesions consisted of individual nodules. (3) All lesions showed atrophic changes which are not characteristic of secondary syphilis. The scars were noncontractile and demonstrated the characteristic tissue paper-like appearance, and the microscopic examination was compatible with that of late syphilis.

At first it was hard to believe that this case was syphilis, in spite of the strongly positive Wassermann reaction, because of the symmetry and generalization of the eruption. Although the pathologic report was strongly suggestive, the final proof of diagnosis was the therapeutic test. The patient received 3,000,000 units of penicillin over a period of nine days. By the tenth day, when he left the hospital, much of the induration had disappeared from the edge of the lesion. Two months afterward the skin looked almost normal; the patient had gained 20 pounds and stated that he felt better than he had in twenty years.

Dr. Harris, Hermann Professional Building.
Dr. Meltzer, 213 Medical Arts Building.

ABSTRACT OF DISCUSSION

DR. LESLIE M. SMITH, El Paso: A generalized tertiary syphiloderm is of sufficient rarity to deserve a report. I have never seen such a case and do not recall a similar report. It is not uncommon for syphilis, either with insufficient treatment or without treatment, to go for many years after the secondary period without the development of demonstrable tertiary lesions. It is the generalized distribution of the tertiary lesions which is of interest in this case.

In tertiary syphilis there is a scarcity of the infecting organisms along with an extreme tissue reactivity; this factor is responsible for both the paucity of the lesions and their destructive character. One can only speculate as to why this particular patient developed so many lesions at the tertiary stage of the disease, and why such a phenomenon has been observed so seldom in the history of syphilology. It would seem that by some means, a shower of treponemas were liberated from an occult focus and caused widely disseminated lesions to develop. Why it should occur in one case out of thousands is a mystery.

AVIATION SCHOOL TO BE DIVIDED

The Air Force School of Aviation Medicine at Randolph Air Force Base will be divided into two sections, according to the October 7 issue of *The Journal of the American Medical Association.*

To remain at Randolph are the headquarters of the school, all research activities, and the training of flight surgeons and aviation medical examiners. Most of the training functions will be carried out at Gunter Air Force Base, Alabama. Flight nurse and all airman training will be transferred to Gunter, and an officer indoctrination course which has been set up especially for all categories of officers just entering the Air Force Medical Service will be conducted there.

The School of Aviation Medicine, dating back to 1917, was moved to Brooks Field in 1926 and to Randolph in 1931.

NEWS

COMING MEETINGS AND CLINICS

State Medical Association of Texas, Galveston, May 1-2, 1951. Dr. William M. Gambrell, Austin, Pres.; Tod Bates, 700 Guadalupe St., Austin, Executive Secy.

American Medical Association, Cleveland, Dec. 5-8, 1950. Dr. Elmer L. Henderson, Louisville, Ky., Pres.; Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secy.

NATIONAL AND REGIONAL

American Academy of Allergy, New York, Feb. 5-7, 1951. Dr. Theodore L. Squier, Milwaukee, Pres.; Mr. James O. Kelley, 208 E. Wisconsin Ave., Milwaukee 2, Executive Secy.

American Academy of Dermatology and Syphilology, Chicago, Dec. 2-7, 1950. Dr. Earl D. Osborne, Buffalo, N. Y., Pres.; Dr. John E. Rauschkolb, 25 Prospect Ave. N. W., Cleveland 15, Secy.

American Academy of General Practice, San Francisco, March 19-22, 1951. Stanley R. Truman, Oakland, Calif., Pres.; Mr. Mac F. Cahal, 406 W. 34th St., Kansas City 2, Executive Sec'y.

American Academy of Neurological Surgery. Dr. William S. Keith, Toronto, Canada, Pres.; Dr. T. C. Erickson, 1300 University Ave., Madison 5, Wis., Secy.

American Academy of Ophthalmology and Otolaryngology. Dr. J. MacKenzie Brown, Los Angeles, Pres.; Dr. W. L. Benedict, 100 First Ave. Bldg., Rochester, Minn., Secy.

American Academy of Pediatrics. Dr. Edward B. Shaw, San Francisco, Pres.; Dr. C. G. Grulee, 636 Church St., Evanston, Ill., Secy.

American Association for Thoracic Surgery, Atlantic City, N. J., April 16-18, 1951. Dr. Alfred Blalock, Baltimore, Pres.; Dr. Brian Blades, 901 23rd St. N. W., Washington, D. C., Secy.

American Association of Genito-Urinary Surgeons, Skytop, Pa., May 16-18, 1951. Dr. Roger C. Graves, Boston, Pres.; Dr. Norris J. Heckel, 122 S. Michigan Ave., Chicago 3, Secy.

American Association of Obstetricians, Gynecologists, and Abdominal Surgeons, Hot Springs, Va., Sept. 6-8, 1951. Dr. James K. Quigley, Rochester, N. Y., Pres.; Dr. William F. Mengert, 2211 Oak Lawn Ave., Dallas, Secy.

American Cancer Society. Dr. Alton Ochsner, New Orleans, Pres.; Mr. M. R. Runyon, 47 Beaver St., New York, Exec. Vice-Pres.

American College of Chest Physicians, Atlantic City, N. J., June 7-10, 1951. Dr. Louis Mark, Columbus, Ohio, Pres.; Mr. Murray Kornfeld, 500 N. Dearborn St., Chicago 10, Executive Secy.

American College of Physicians, St. Louis, April 9-13, 1951. Dr. William S. Middleton, Madison, Wis., Pres.; Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Secy.

American College of Radiology, Atlantic City, June 10, 1951. Dr. C. Edgar Virden, Kansas City, Mo., Pres.; Mr. W. C. Stronach, 20 N. Wacker Drive, Chicago 6, Executive Secy.

American College of Surgeons. Dr. Frederick A. Coller, Ann Arbor, Mich., Pres.; Dr. Paul B. Magnuson, 40 E. Erie St., Chicago 11, Secy.

American Congress of Physical Medicine, Denver, Sept 3-8, 1951. Dr. Arthur L. Watkins, Boston, Pres.; Dr. Richard Kovacs, 2 E. 88th St., New York 28, Secy.

American Dermatological Association, Hot Springs, Va., May 23-26, 1951. Dr. Henry E. Michelson, Minneapolis, Pres.; Dr. L. A. Brunsting, 102 2nd Ave., S. W., Rochester, Minn, Secy.

American Gastro-Enterological Association, Atlantic City, June 8-9, 1951. Dr. John G. Mateer, Detroit, Pres.; Dr. Dwight L. Wilbur, 655 Sutter St., San Francisco, Secy.

American Gynecological Society, New York, May 7-9, 1951. Dr. Frederick Irving, Brookline, Pres.; Dr. Norman F. Miller, 1313 E. Ann St., Ann Arbor, Mich., Secy.

American Hospital Association. Dr. Charles F. Wilinsky, Boston, Pres.; Mr. George P. Bugbee, 18 E. Division St., Chicago, Executive Secy.

American Laryngological, Rhinological, and Otological Society, White Sulphur Springs, W. Va., May 6-8, 1951. Dr. Louis H. Clerf, Philadelphia, Pres.; Dr. C. S. Nash, 277 Alexander St., Rochester 8, N. Y., Secy.

American Neurological Association. Dr. Henry W. Woltman, Rochester, Minn., Pres.; Dr. H. Houston Merritt, 710 W. 168th St., New York 32, Secy.

American Ophthalmological Society, White Sulphur Springs, W. Va., June 7-9, 1951. Dr. John H. Dunnington, New York, Pres.; Dr. M. C. Wheeler, 30 W. 59th St., New York 19, Secy.

American Orthopedic Association, White Sulphur Springs, W. Va., June 20-23, 1951. Dr. James S. Speed, Memphis, Pres.; Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secy.

American Pediatric Society, Atlantic City, May 2-5, 1951. Dr. Bronson Crothers, Boston, Pres.; Dr. Henry G. Poncher, 1819 W. Polk St., Chicago 12, Secy.

American Proctologic Society, Atlantic City, June 7-10, 1951. Dr. Hoyt R. Allen, Little Rock, Pres.; Dr. W. Wendell Green, 1838 Parkwood Ave., Toledo 2, Secy.

American Psychiatric Association. Dr. John C. Whitehorn, Baltimore, Pres.; Dr. R. Finley Gayle, 501 E. Franklin St., Richmond, Va., Secy.

American Public Health Association, St. Louis, Oct. 30-Nov. 3, 1950. Dr. Lowell J. Reed, Baltimore, Pres.; Dr. R. M. Atwater, 1790 Broadway, New York 19, Secy.

American Society of Anesthesiologists, Houston, Nov. 7-10, 1950. Dr. Rolland J. Whitacre, East Cleveland, Ohio, Pres.; Dr. J. E. Remlinger, Jr., 188 W. Randolph St., Chicago, Secy.

American Society of Clinical Pathologists. Dr. James B. McNaught, Denver, Pres.; Dr. Clyde G. Culbertson, Indiana University School of Medicine, Indianapolis, Secy.

American Surgical Association, Washington, D. C., April 11-13, 1951. Dr. Samuel C. Harvey, New Haven, Conn., Pres.; Dr. Nathan Womack, University of Iowa, Iowa City, Secy.

American Urological Association, Chicago, May 21-24, 1951. Dr. Thomas D. Moore, Memphis, Tenn., Pres.; Dr. C. H. deT. Shivers, 121 S. Illinois Ave., Atlantic City, N. J., Secy.

Association of American Physicians and Surgeons, Indianapolis, Oct. 4-6, 1951. Dr. Lawerence Shinabery, Fort Wayne, Ind., Pres.; Mr. Harry E. Northam, 360 N. Michigan Ave., Chicago 1, Executive Secy.

International College of Surgeons, U. S. Chapter, Cleveland, Oct. 31-Nov. 3, 1950. Dr. Custis Lee Hall, Washington, D. C., Pres.; Dr. Arnold S. Jackson, 1516 Lake Shore Drive, Chicago, Secy.

National Tuberculosis Association, Cincinnati, May 14-18, 1951. Dr. David T. Smith, Durham, N. C., Pres.; Dr. H. Stuart Willis, 1790 Broadway, New York 19, Secy.

Radiological Society of North America, Chicago, Dec. 10-15, 1950. Dr. Warren W. Furey, Chicago, Pres.; Dr. D. S. Childs, Medical Arts Bldg., Syracuse 2, N. Y., Secy.

Southern Medical Association, St. Louis, Nov. 13-16, 1950. Dr. Hamilton W. McKay, Charlotte, N. C., Pres.; Mr. C. P. Loranz, 1020 Empire Bldg., Birmingham, Ala., Secy.

Southern Psychiatric Association. Dr. R. Finley Gayle, Jr., Richmond, Va., Pres.; Dr. Newdigate M. Owensby, Medical Arts Bldg., Atlanta, Ga., Secy.

Southern Surgical Association, Hollywood, Fla., Dec. 5-7, 1950. Dr. G. V. Brindley, Temple, Pres.; Dr. John C. Burch, 2112 West End Ave., Nashville, Tenn., Secy.

Southwest Allergy Forum, San Antonio, April 8-10, 1951. Dr. J. H. W. Rouse, San Antonio, Pres.; Dr. Boen Swinny, 224 Medical Arts Bldg., San Antonio 5, Secy.

Southwest Regional Cancer Conference, Fort Worth, Nov. 15, 1950. Secy., 209 Medical Arts Bldg., Fort Worth.

Southwestern Medical Association, El Paso, Fall, 1951. Dr. L. W. Breck, El Paso, Pres.; Dr. Wickliffe R. Curtis, First National Bank Bldg., El Paso, Secy.

Southwestern Surgical Congress, St. Louis, Sept. 24-26, 1951. Dr. Leo J. Starry, Oklahoma City, Pres.; Dr. C. R. Rountree, 1227 Classen, Oklahoma City 3, Secy.

Tri-State Medical Assembly. Dr. W. S. Terry, Jefferson, Pres.; Dr. James Harris, Marshall, Secy.

United States-Mexico Border Public Health Association, Los Angeles, April 4-6, 1951. Dr. Luis Arriaga Velez, Chihuahua, Mexico, Pres.; Dr. M. F. Haralson, 314 U. S. Court House, El Paso, Secy.

STATE

Texas Academy of General Practice, Houston, September, 1951. Dr. Andrew S. Tomb, Victoria, Pres.; Dr. B. H. Bayer, 104 E. Twentieth St., Houston, Secy.

Texas Academy of Internal Medicine, Houston, Dec. 9-10, 1950. Dr. Samuel A. Shelburne, Dallas, Pres.; Dr. John S. Chapman, 3810 Swiss Ave., Dallas, Secy. Meeting restricted to members.

Texas Air-Medics Association, Galveston, April 30, 1951. Dr. D. P. Laugenour, Dallas, Pres.; Dr. C. F. Miller, 906 Medical Arts Bldg., Waco, Secy.

Texas Association of Obstetricians and Gynecologists, Galveston, Feb. 9-10, 1951. Dr. Howard Smith, Marlin, Pres.; Dr. George F. Adam, 4115 Fannin, Houston, Secy.

Texas Chapter, American College of Chest Physicians, Galveston, April 30, 1951. Dr. David McCullough, Kerrville, Pres.; Dr. Henry R. Hoskins, 514 Medical Arts Bldg., San Antonio, Secy.

Texas Club of Internists. Dr. Ghent Graves, Houston, Pres.; Dr. Hatch W. Cummings, Jr., Houston, Secy.

Texas Dermatological Society, Galveston, April 30, 1951. Dr. J. G. Brau, Dallas, Pres.; Dr. W. Harris Connor, 601 Medical Arts Bldg., Houston, Secy.

Texas Diabetes Association, Galveston, April 29, 1951. Dr. B. F. Smith, Houston, Pres.; Dr. W. N. Powell, W. Ave. F, Temple, Secy.

Texas Division, American Cancer Society, San Antonio, Nov. 29, 1950. Mr. Frank C. Smith, Houston, Pres.; Mr. J. Louis Neff, 2307 Helena St., Houston 6, Executive Director.

Texas Heart Association, Galveston, April 30, 1951. Dr. George W. Parson, Texarkana, Pres.; Miss Roberta Miller, 411 Reserve Loan Life Bldg., Dallas, Executive Secy.

Texas Hospital Association, San Antonio, April 24-26, 1951. Mr. Roy Wilmesmeier, Houston, Pres.; Mrs. Ruth Barnhart, 2210 Main St., Dallas, Secy.

Texas Neuropsychiatric Association. Dr. Martin L. Towler, Galveston, Pres.; Dr. John Blair, San Antonio, Secy.

Texas Orthopedic Association, Galveston, April 30, 1951. Dr. Louis Breck, El Paso, Pres.; Dr. Margaret Watkins, 3629 Fairmount St., Dallas, Secy.

Texas Pediatric Society, Houston, October, 1951. Dr. Thomas D. McCrummen, Austin, Pres.; Dr. M. C. Carlisle, 1410 Austin Ave., Waco, Secy.

Texas Public Health Association, Galveston, Feb. 18-21, 1951. Mr. Barnie A. Young, Austin, Pres.; Mr. Earle W. Sudderth, Dallas County Health Department, Court House, Dallas, Executive Secy.

Texas Radiological Society, Galveston, Jan. 19-20, 1951. Wayne D. Ramsey, Abilene, Pres.; Dr. R. P. O'Bannon, 650 Fifth Ave., Fort Worth, Secy.

Texas Railway and Traumatic Surgical Association, Galveston, April 30, 1951. Dr. R. J. White, Fort Worth, Pres.; Dr. W. F. Parsons, First National Bank Bldg., Fort Worth, Secy.

Texas Rheumatism Association, Houston, Dec. 8, 1950. Dr. Moise D. Levy, Jr., Houston, Pres.; Dr. Robert H. Mitchell, 210 Medical Arts Bldg., Fort Worth, Secy.

Texas Society for Mental Health, Galveston, March 8-9, 1951. Dr. Hamilton Ford, Galveston, Pres.; Mrs. Elizabeth F. Gardner, 1617 Watchhill Road, Austin 21, Executive Secy.

Texas Society of Anesthesiologists. Galveston, April 30, 1951. Dr. Russell Bonham, Houston, Pres.; Dr. Werner Hoeflich, 2301 Reba, Houston, Secy.

Texas Society of Gastroenterologists and Proctologists, Galveston, April 30, 1951. Dr. Carl G. Giesecke, San Antonio, Pres.; Dr. John S. Bagwell, Medical Arts Bldg., Dallas, Secy.

Texas Society of Ophthalmology and Otolaryngology, Dallas, Dec. 8-9, 1950. Dr. V. R. Hurst, Longview, Pres.; Dr. John L. Matthews, 929 Nix Professional Bldg., San Antonio, Secy.

Texas Society of Pathologists, Galveston, Jan. 28, 1951. Dr. Charles Phillips, Temple, Pres.; Dr. A. O. Severance, 205 Camden, San Antonio, Secy.

Texas Surgical Society, Galveston, April 2-3, 1951. Dr. Edward White, Dallas, Pres.; Dr. Truman G. Blocker, 927 Strand, Galveston, Secy.

Texas Tuberculosis Association, Dallas, April 13-14, 1951. Dr. Elliott Mendenhall, Dallas, Pres.; Miss Pansy Nichols, 208 E. Ninth, Austin, Executive Secy.

Texas Urological Society, San Antonio, Jan. 22, 1951. Dr. Hub E. Isaacks, Fort Worth, Pres.; Dr. John M. Pace, 428 Medical Arts Bldg., Dallas, Secy.

DISTRICT

Second District Society. Dr. James W. Rainer, Odessa, Pres.; Dr. Frank M. James, 1021 N. Whitaker Ave., Odessa, Secy.

Third District Society, Amarillo, April 10-11, 1951. Dr. Allen T. Stewart, Lubbock, Pres.; Dr. James T. Hall, 1302 Avenue Q, Lubbock, Secy.

Fourth District Society, Brownwood, Nov. 1, 1950. Dr. Gordon F. Madding, San Angelo, Pres.; Dr. S. B. Locker, First National Bank Bldg., Brownwood, Secy.

Fifth and Sixth Districts Society, Corpus Christi, July 6-7, 1951. Dr. E. King Gill, Corpus Christi, Pres.; Dr. Foy Moody, 1611 Fifth St., Corpus Christi, Secy.

Seventh District Society. Dr. John F. Thomas, Austin, Pres.; Dr. George W. Tipton, 502 W. 15, Austin, Secy.

Eighth District Medical Society, Spring, 1951. Dr. Leonard Johnson, El Campo, Pres.; Dr. Robert Casey, Texas City, Secy.

Tenth District Medical Society, Port Arthur. Dr. J. A. Richardson, Sr., Jasper, Pres.; Dr. Dale H. Davies, Liberty, Secy.

Eleventh District Society, Henderson, Spring, 1951. Dr. Griff T. Ross, Mount Enterprise, Pres.; Dr. John M. Travis, Jr., Jacksonville, Secy.

Twelfth District Society, Temple, Jan. 9, 1951. Dr. W. K. Logsdon, Corsicana, Pres.; Dr. N. C. Smith, Hillsboro, Secy.

Thirteenth District Society. Dr. R. L. Daily, Wichita Falls, Pres.; Dr. S. W. Wilson, Medical Arts Bldg., Fort Worth, Secy.

Fourteenth District Society, Bonham, June, 1951. Dr. Mayo Tenery, Waxahachie, Pres.; Dr. L. W. Johnston, 502 W. College St., Terrell, Secy.

Fifteenth District Society, 1951. Dr. R. G. Granbery, Marshall, Pres.; Dr. H. O. Padgett, Marshall, Secy.

CLINICS

Dallas Southern Clinical Society, Dallas, March 26-29, 1951. Miss Betty Elmer, Medical Arts Bldg., Dallas 1, Executive Secy.

International Post-Graduate Medical Assembly of Southwest Texas, San Antonio, Jan. 23-25, 1951. Dr. John J. Hinchey, P. O. Box 2445, San Antonio, Secy.

New Orleans Graduate Medical Assembly, New Orleans, March 5-8, 1951. Dr. Woodard D. Beacham, Room 105, 1430 Tulane Ave., New Orleans 12, Secy.

North Texas-Southern Oklahoma Fall Clinical Conference, Wichita Falls. Dr. Robert L. Daily, 214 Hamilton Bldg., Wichita Falls, Program Chairman.

Oklahoma City Clinical Society Conference, Oklahoma City, Oct. 30-Nov. 2, 1950. Mrs. Muriel R. Waller, 512 Medical Arts Bldg., Oklahoma City 2, Executive Secy.

Post Graduate Medical Assembly of South Texas, Houston, Nov. 20-22, 1950. Dr. Donald M. Paton, Secy., 229 Medical Arts Bldg., Houston.

Medical Branch Announces Courses

Postgraduate refresher courses for this fall and winter being offered in cooperation with the Texas State Department of Health have been announced by the University of Texas Medical Branch. They are as follows: November 7-10, Tumors of Female Genital Tract; November 13-17, Pediatrics; February 5-9, Neuropsychiatry; March 1-4, Tumors of Lymphoid System, Neck, Mediastinum, and Thoracic Cage; and April 2-6, Obstetrics and Gynecology.

These refresher courses are in addition to four in disaster preparedness for atomic warfare which will be given in various Texas cities as follows: Corpus Christi, December 15-16; Tyler, January 12-13; El Paso, February 2-3; and Lubbock, February 15-17. The courses will include material on organization for medical preparedness; principles of handling and sorting casualties; field dressing; diagnosis and treatment of burns, traumatic injuries, and radiation sickness; and the collection and preservation of necessary supplies.

Facilities for physicians offered by the Medical Branch also include residencies in medical specialties, preclinical work for specialties boards, externships, speakers for local medical meetings, and courses by individual arrangement.

Further information concerning all postgraduate courses may be obtained from Dr. E. Ivan Bruce, Jr., director of the Post-Graduate Division, University of Texas Medical Branch, Galveston. Dr. Bruce recently was appointed as director to succeed Dr. T. G. Blocker, Jr.

Postgraduate Courses in Mental Health

Three postgraduate courses in mental health for physicians have been scheduled for 1950-1951 by the Texas State Department of Health. The first, for pediatricians, will deal with child development and mental health and will be sponsored jointly by the Pediatrics Department of Baylor University College of Medicine, Houston, and the State Department of Health. It will be held at Baylor from January 15 to 19.

The second and third postgraduate courses, for general practitioners, will be concerned with psychiatry in general practice. The second course will be sponsored jointly with the University of Texas Medical Branch from February 5 to

9 in Galveston, and the third with Baylor University College of Medicine from March 19 to 23 in Houston.

Out-of-state speakers who will lead the discussions for the three courses will be announced later. Complete details will be mailed to all pediatricians and general practitioners in Texas, and a limited number of physicians will be accepted for each of the courses.

Inquiries should be addressed to the Texas State Department of Health, Austin.

TRI-STATE MEDICAL ASSEMBLY

About 150 physicians attended the Tri-State Medical Assembly which met conjointly with the Louisiana Academy of General Practice in Shreveport on September 29 and 30.

Elected to office in the Assembly were the following: Dr. W. S. Terry, Jefferson, president; Dr. James Harris, Marshall, secretary; Dr. Kirven Nichols, Atlanta, vice-president from Texas; Dr. Robert Lucas, Shreveport, vice-president from Louisiana; and Dr. Frank Thibault, El Dorado, Ark., vice-president from Arkansas.

The following scientific program was given:

SEPTEMBER 29

Use and Abuse of Antibiotics in Lung Conditions—Dr. Dan Jenkins, Houston.
Diagnosis and Treatment of Alcoholism in General Practice—Dr. Andrew S. Tomb, Victoria.
Management of Pruritus Ani—Dr. Marion S. Craig, Jr., Little Rock.
Medical Aspects of Atomic Warfare—Col. R. L. Bohannon, USAF.

SEPTEMBER 30

Acute Conditions of Abdomen—Dr. Philip Thorek, Chicago.
Hypothyroidism in Children—Dr. William Reilly, Little Rock.
Luncheon and Round-Table Discussion.
Cortisone and ACTH—Dr. Conley H. Sanford and Dr. Ben D. Hall, Memphis, Tenn.
Gynecologic Endocrine Problems—Dr. Karl J. Karnaky, Houston.
Acute Conditions of Gallbladder—Dr. Philip Thorek, Chicago.

A banquet for the Louisiana State University Medical Alumni was given the evening of September 29. The annual banquet of the Tri-State Medical Assembly was held the next evening with Dr. R. B. Robins, Camden, Ark., as speaker. New officers of the Louisiana Academy of General Practice were installed, and the new president of the Tri-State Medical Assembly was introduced.

TEXAS SURGICAL SOCIETY

The Texas Surgical Society met in Waco on October 2 and 3, with ninety-six members and sixty-six guests attending. Officers were elected as follows: Drs. Edward White, Dallas, president; P. I. Nixon, San Antonio, first vice-president; B. W. Turner, Houston, second vice-president; T. G. Blocker, Jr., Galveston, secretary; C. B. Carter, Dallas, treasurer; and Howard O. Smith, Marlin, council member.

The scientific program which was presented follows:

OCTOBER 2

Cyst of Tongue: Case Report—Dr. Albert W. Hartman, Jr., San Antonio.
Cross Finger Flap: New Method of Repair—Dr. Thomas D. Cronin, Houston.
Dislocation of Hip with Fracture of Posterior Acetabular Rim—Dr. Howard Dudgeon, Jr., Waco.
Introduction of Blood into Peritoneal Cavity: Experimental Study—Dr. William F. Mengert, Dallas.
Extradural Cerebellar Hematomas—Dr. Ralph A. Munslow, San Antonio.
Choice of Operation in Surgical Treatment of Peptic Ulcer of Duodenum and Stomach—Dr. C. D. Bussey, Dallas.
Congenital Atresia of Duodenum: Case Report—Dr. Gordon F. Madding, San Angelo.
Peptic Ulcer Requiring Gastrectomy—Dr. Norman Duren, Beaumont.
Ulcerative Colitis, A Problem—Dr. Raymond W. McNealy, Chicago, professor of surgery, Northwestern University.
Surgical Problem of Massive Melena—Dr. Robert M. Moore, Galveston.
Neomycin; New Intestinal Antiseptic—Dr. Edgar J. Poth, Galveston.

OCTOBER 3

Use of Tantalum Mesh in Hernia Repair—Dr. T. H. Thomason, Fort Worth.
Unusual Complications Following Ureterosigmoidostomy—Dr. J. Howard Shane, Dallas.
Mucoid Impaction of Bronchi—Dr. Robert R. Shaw, Dallas.
One Stage Multiple Surgical Approach to Cancer of Esophagus—Dr. A. W. Harrison and Dr. W. H. Pickett, Galveston (by invitation).
Progress in Surgery of Congenital Malformations of Heart—Dr. J. W. Duckett, Dallas.

The evening of October 1 a cocktail party was given at the home of Dr. R. W. Crosthwait. A luncheon was held October 2, and a cocktail party that evening preceded a banquet at which Dr. R. J. White delivered his presidential address, "The Surgeon's Religion."

UNIVERSITY OF TEXAS MEDICAL BRANCH

Dr. William Shanahan, a former member of the Psychoanalytical Institute, Chicago, has been appointed to the directorship of the State Psychopathic Hospital at the University of Texas Medical Branch, Galveston. A new training program in psychoanalysis for regular and postgraduate students will be instituted.

A survey of the Medical Branch was made the last week in September by a three member committee of the American Medical Association and the Association of American Medical Colleges, reports the Galveston *Tribune.* One of seventy-seven to be made in the United States and the first to be made in Texas, the survey has as its object to determine how many doctors in the United States are being trained; how the teaching programs relate to the practical problems a medical student meets when he begins practice; how deep is the interest of staffs and students in research work; how medical school hospitals serve people in their locality and state; how localities and states assist their medical schools; and how state and county medical societies assist their medical schools. Surveys will be made at Baylor University College of Medicine, Houston, and the Southwestern Medical School, Dallas.

Dr. Eduardo Braun-Menendez, professor of physiology at the University of Buenos Aires, gave a series of lectures on cardiovascular and renal studies at the Medical Branch from October 10 to 13.

Recent appointments at the Medical Branch include Etta McDonald, Ph. D., assistant professor of bacteriology and parasitology; Pauline Heizer, Ph. D., research associate in the Tissue Culture Laboratory; and Frank S. Engley, Jr., Ph. D., assistant professor of bacteriology and parasitology.

A committee on skin metabolism and regeneration has been established at the Medical Branch to correlate studies in these fields with particular reference to the management of burns and radiation injury. Members are as follows: Dr. Clarence S. Livingood, chairman, and Dr. T. G. Blocker, Jr., C. M. Pomerat, Ph. D., Kenneth McConnell, Ph. D., and Dr. Arild Hansen.

Mr. W. L. Moody, Jr., Galveston banker, has given $1,000 to establish a research fund in anesthesia under the direction of Dr. Harvey C. Slocum, professor of anesthesiology at the Medical Branch.

Grants totaling approximately $50,000 have been made by the United States Public Health Service for support of research at the Medical Branch including the following: $4,600 for studies on immunity to filarial infection under the direction of J. Allen Scott, Sc. D., professor of preventive medicine; $24,600 for clinical cancer research under the direction of Dr. Frank M. Townsend, associate professor of pathology; $5,300 for study of the role of the pancreas in peptic ulcer formation under the direction of Dr. Edgar J. Poth, professor of surgery; $7,100 for study of the effects of temperature on chlorination of sewage under the direction of C. H. Connell, Ph. D., associate professor of preventive

medicine and sanitation; $5,200 for study of factors influencing the susceptibility of mosquitoes to malarial parasites under the direction of Don W. Micks, Sc. D., assistant professor of preventive medicine; and $8,700 for research on enzymatic patterns in growth and differentiation under the direction of W. W. Nowinski, Ph. D., associate professor of neurochemistry.

PERSONALS

Dr. William Raymond Metzger, Corpus Christi; *Major George W. Tate,* Temple; and *Captain Robert Wilkens,* Dallas, represented Texas at the United States Army's research graduate school on nuclear energy in Washington, D. C., in September, reports the Corpus Christi *Times.*

Dr. Jim Camp, Pecos, and *Dr. S. S. Munger,* Marlin, were among forty-seven physicians and dentists who were awarded a certificate for 50 years or more of community service by the University of Tennessee at its commencement exercises September 25, according to news items from the Pecos *Enterprise* and Marlin *Democrat.*

Dr. D. R. Knapp, Kerrville, was honored in October by the board of directors of the old Kerrville General Hospital at its final meeting when a Dwight Knapp Surgical Instrument Fund was established for the purchase of instruments at the recently opened Sid Peterson Memorial Hospital, Kerrville. Dr. Knapp was manager of the Kerrville General Hospital from its organization in 1938 until it was succeeded by the new hospital, reports the Kerrville *Mountain Sun.*

Herman I. Chinn, Ph. D., chief of the Department of Pharmacology at the School of Aviation Medicine, Randolph Field, has been named winner of the 1951 Wellcome Medal and Award by the Association of Military Surgeons of the United States, according to the October 7 issue of *The Journal of the American Medical Association.* The award was made for his paper on "Motion Sickness in Military Service."

Dr. and Mrs. William T. Shell, Corsicana, were entertained with an open house on their golden wedding anniversary September 20 in the library of the Corsicana Hospital and Clinic, where Mrs. Shell had been a patient, states the Corsicana *Sun.* Hosts for their parents were Mrs. J. B. Ellett, Tyler, and Dr. William T. Shell, Jr., and Rufus Shell, Corsicana.

Dr. J. C. Erwin, Sr., retired McKinney physician, celebrated his ninety-third birthday September 26, reports the McKinney *Democrat-Gazette.*

Donald Anderson, 13, the son of *Dr. and Mrs. James P. Anderson,* Brady, died October 1, 1950, informs the Corsicana *Sun.*

Dr. James R. Whitehurst, Galveston, married Miss Joe Lene Chernik in Columbus on September 2, according to the University of Texas Medical Branch Alumni *Bulletin.*

A son, Jere Lawrence, was born August 30 to *Dr. and Mrs. Roy L. Smith,* Bryan.

Dr. and Mrs. Earl Kirk, Bryan, are the parents of a son, James Frederick, born September 30.

The recent parents of daughters are the following: *Dr. and Mrs. H. J. H. Marshall,* El Paso, *Dr. and Mrs. W. S. Parks, Jr.,* Fort Worth, *Dr. and Mrs. O. T. Kirksey,* San Antonio, and *Dr. and Mrs. R. H. Gibbs,* Galveston, states the University of Texas Medical Branch Alumni *Bulletin.*

Fatality of Coronary Thrombosis

That coronary thrombosis is not usually fatal within a short time has been disproved by Metropolitan Life Insurance Company statisticians.

Contrary to common belief that an attack from the heart disease causes immediate death, the statisticians' studies show that 70 per cent of a group of persons who had had one or more coronary attacks were still alive at the end of five years, 50 per cent at the end of ten years, and 43 per cent at the end of twelve years. Included in the study were 540 men for whom life insurance disability benefits were approved because of heart conditions.

Among victims of degenerative heart disease who had had no record of an acute coronary attack or other complication, the five-year survivorship rate was 72 per cent, the ten-year rate 50 per cent, and the twelve-year rate 44 per cent.

The survivorship rate was favorable even among patients with records of serious kidney or cerebral involvement: 40 per cent at the end of five years and about 17 per cent at the end of ten years. Of those with valvular heart disease 44 per cent were alive at the end of five years and 27 per cent at the end of ten years.

The statisticians pointed out that the results of the study should be encouraging to many thousands of persons with heart disease and their families and that a large number of cardiac patients can enjoy many years of useful life if they have adequate medical supervision and live within their physical limitations.

Disaster Medical Directors Named

As part of the planning and operating phases of the State Disaster Relief and Civil Defense program, fifteen state disaster districts in Texas have been established by the executive order of Governor Allan Shivers, and a medical director and alternate medical director have been appointed for each by the State Health Officer, Dr. George W. Cox.

The state personnel in each district in addition to the medical director consists of (1) the highway patrol captain, (2) a representative designated by the Adjutant General of Texas, (3) a fire defense coordinator, (4) the engineer of the Texas Highway Department, and (5) a representative to be designated by the State Department of Public Welfare. In addition, the American Red Cross is being invited to name a representative for each district to provide correlation with the regular disaster relief organization of the national and local organization.

Representatives of the State Medical Association will act as a medical advisory committee to the State Health Officer, who is also the state medical defense director. In addition to the fifteen medical defense districts under his direction will be the following sections: medical supplies, equipment, and finance; professional training and assignment; health education and public information; emergency field medical services; hospital facilities; nursing services; blood and laboratory services; and state water coordinator and environmental sanitation services, including a radiological division.

The districts established by the State Department of Health, the district medical directors and alternate medical directors are as follows:

District 1, Dr. B. M. Primer, Austin; Dr. David E. Brown, Bryan; 2, Dr. J. M. Pickard, Dallas; Dr. Ralph Jenks, Greenville; 3, Dr. James H. Kreimeyer, Abilene; Dr. Fred Dinkler, Sweetwater; 4, Dr. Roy E. Fox, Port Arthur; Dr. E. W. Hawkins, Groveton; 5, Dr. David M. Marcley, Amarillo; Dr. R. Malcolm Brown, Pampa; 6, Dr. L. E. Woods, Lubbock; Dr. Frank P. Miller, Brownfield; 7, Dr. George H. Garrett, Pecos; Dr. F. E. Sadler, Midland; 8, Dr. R. E. Johnson, San Angelo; Dr. James C. Spalding, Brownwood; 9, Dr. M. M. Dorbrandt, San Antonio; Dr. George W. Wilhite, Uvalde; 10, Dr. J. M. Cameron, Corpus Christi; Dr. Claude A. Selby, Sinton; 11, Dr. L. D. Farragut, Houston; Dr. H. W. Mann, Angleton; 12, Dr. W. R. Ross, Tyler; Dr. A. L. Waller, Quitman; 13, Dr. Fred O. Tonney, San Benito; Dr. Robert A. Hale, Edinburg; 14, Dr. Carl F. Jordan, Fort Worth; Dr. H. H. Terry, Wichita Falls; 15, Dr. N. M. Atkins, Waco; Dr. Harry Frey, Belton.

"HEALTHY LIVING IN OUR COUNTY" GOES TO SCHOOL

Evidence of the interest which "Healthy Living in Our County" created in Travis County, the area in which the program first went on the air. This educational radio quiz for rural school children is a major project of the Woman's Auxiliary to the State Medical Association.

The upper left photograph shows a warm-up period of games and sample questions preceding a broadcast. Participating teams during a broadcast are pictured upper right. The center pictures depict listening periods in two schools which regularly hear the "Healthy Living" series. The two lower pictures illustrate that follow-up studies in diseases and how to avoid them can drive home the lessons learned from the radio program.

Prints of these photographs and of approximately 300 others relating to "Healthy Living in Our County" are available without charge to interested auxiliaries and medical societies. The pictures are supplied through the courtesy of the University of Texas. Inquiries should be addressed to the State Medical Association, 700 Guadalupe Street, Austin.

Health Care for School Children

Basic principles for the provision of health care for school-age children have been defined for the first time on a world-wide basis by an expert committee of the World Health Organization. Meeting in Geneva, Switzerland, from August 5 to 12, the committee emphasized the need for school services to be organized as team projects involving parents, the community, professional groups, social agencies, and others interested in child welfare. Furthermore, the committee pointed out that school health services should be a direct continuation of preschool services.

As minimum comprehensive, continuous functions of the school health services the committee listed the following: (1) medical supervision and dental hygiene, (2) communicable disease control, (3) nutrition, (4) mental health, and (5) health education.

TEXAS RHEUMATISM ASSOCIATION

A leading researcher in rheumatic diseases will be the distinguished guest speaker at the meeting of the Texas Rheumatism Association on December 8 at the Shamrock Hotel, Houston. He is Richard H. Freyberg, New York, associate professor of clinical medicine, Cornell University, and Director of the Department of Internal Medicine, Hospital for Special Surgery.

DR. DENTON KERR ELECTED

The Association of American Physicians and Surgeons meeting in Houston October 5-7 elected Dr. Denton Kerr, Houston, its president-elect. Other officers are Dr. Lawerence Shinabery, Fort Wayne, Ind., president; Dr. Frederick B. Exner, Seattle, Wash., secretary; and Dr. Clyde H. Fredrickson, Missoula, Mont., treasurer.

Dr. Kerr is the immediate past-president of the Harris County Medical Society, chairman of the Houston Board of Health, and instructor in clinical gynecology at Baylor University College of Medicine, Houston.

The association will meet again in Indianapolis, October 4-6, 1951. An interim meeting of the House of Delegates will be held April 19-21, 1951, in Chicago.

DR. DENTON KERR

Distinguished guest speakers and their topics were as follows: Mr. John T. Flynn, New York, "The Struggle of Our Time"; Dr. James L. Doenges, Anderson, Ind., "So You Think It Can't Happen Here"; Dr. William C. Black, San Diego, "Freedom Forces in America and Western Europe"; Dr. Edward Roland Annis, Miami, "The Florida Story"; Dr. Joseph C. Bunten, Cheyenne, past-president of the association, "The Doctor's Security"; and Marjorie Shearon, Ph. D., Washington, D. C., "Communism Unlimited."

Dr. Shearon, who is editor of "Challenge to Socialism," and Dr. Doenges, who is chairman of the committee to oppose socialized medicine of the Madison County Medical Society, also addressed a public meeting in Beaumont on October 3. Dr. Shearon gave talks October 4 at a meeting of the Jefferson County Auxiliary in Port Arthur and at the University of Texas Medical Branch, Galveston.

Southwestern Surgical Congress

Approximately 400 physicians and slightly fewer than 200 physicians' wives registered for the Southwestern Surgical Congress in Denver from September 25 to 27. Members of the Congress are from ten states: Texas, Oklahoma, New Mexico, Arizona, Colorado, Arkansas, Kansas, Missouri, Wyoming, and Utah.

Thirty-two papers were read, including those of members and those of the seven guest speakers, who were as follows: Drs. Harwell Wilson, Memphis, professor and chairman of the Division of Surgery, University of Tennessee; Robert W. Buxton, Ann Arbor, Mich., associate professor of surgery, University of Michigan School of Medicine; Richard W. TeLinde, Baltimore, professor of gynecology, Johns Hopkins University; Julian A. Moore, Asheville, N. C., chief of surgical service, St. Joseph's and Memorial Mission Hospitals; Thomas J. Kinsella, Minneapolis, clinical professor of surgery, University of Minnesota; Arnold S. Jackson, Madison, co-chief of Jackson Clinic and secretary of the International College of Surgeons; and James D. Rives, New Orleans, professor of surgery, Louisiana State University Medical School.

Officers for 1950-1951 are Drs. Leo J. Starry, Oklahoma City, president; Kenneth C. Sawyer, Denver, vice-president; C. R. Rountree, Oklahoma City, secretary-treasurer; and Michael E. DeBakey, Houston, president-elect. The 1951 meeting will be held September 24-26 in St. Louis.

COLLEGE HEALTH ASSOCIATION TO MEET

Interested physicians may attend the meeting in Austin on November 29 and 30 of the Southwestern Section of the American College Health Association.

At a luncheon a panel discussion on college tuberculosis control programs sponsored jointly by the section and by the Committee on Tuberculosis of the Texas State Tuberculosis Association will be held. Those participating and their topics will be as follows: Dr. J. W. Middleton, the University of Texas Medical Branch, Galveston, "Use of Skin Tests in College Control Programs"; Dr. Elias Strauss, Southwestern Medical School of the University of Texas, Dallas, "Importance and Control of the College Community, Exclusive of Campus"; Dr. Hardy Kemp, Baylor University College of Medicine, Houston, "Importance of Control of Faculty and Nonteaching Personnel"; and Dr. Lewis J. Moorman, University of Oklahoma Medical School, Oklahoma City, "Suggested College Admission Requirements that Would Reduce the Burden of Control Program." A question and answer period will follow the discussion.

Another topic of particular interest to physicians is "Malignancies in the College Age Group" which will be discussed by Miss Eleanor J. McDonald, A. B., epidemiologist at the M. D. Anderson Cancer Hospital, Houston.

Additional information may be obtained from Dr. Caroline Crowell, President, Southwestern Section of the American College Health Association, the University of Texas, Austin.

TEXAS CANCER MEETING DATE CHANGED

The fifth annual meeting of the Texas Division of the American Cancer Society, originally scheduled for Galveston in early November, will be held November 29 in San Antonio. The postponement was made to allow the series of sixteen district annual meetings, several of which will be held in mid-November, to be completed. The San Antonio session will be devoted entirely to business.

This is the first year that annual district meetings have been held. Most programs are featuring a demonstration tumor clinic conference designed to help the general practitioner learn improved methods of diagnosis and treatment of cancer. Volunteer lay leaders are attending simultaneous meetings to discuss public education and service programs.

Districts of the Texas Division coincide with those of the State Medical Association, with the exception that the Third District is divided into northern and southern areas.

Modern public health does not prevent death alone. It also prevents disease. For every life preserved by a tuberculosis program, scores of individuals are saved from invalidism. For every life saved from malaria, hundreds of individuals are maintained as active producers in the population.—Am. J. Pub. Health, August, 1950.

LIBRARY SECTION

PACKAGE SERVICE

The package library consists of collections of reprints and other periodical material on various subjects, prepared for lending to members of the Association. Request for packages should be addressed "Library, State Medical Association of Texas, 700 Guadalupe Street, Austin, Texas." Twenty-five cents in stamps should be enclosed with the request to cover postage and part of the expense of collecting the material. Packages are allowed to remain in the hands of the borrower for 14 days.

ACCESSIONS

The following additions were made to the Library during October:

Reprints received, 1,927.

Journals received, 254.

Books received, 17.

Textbook of X-Ray Diagnosis, Shanks and Kerley, 2nd edition; *Researches in Binocular Vision,* Ogle; *An Integrated Practice of Medicine, Vol. 5, Latest Developments in Therapeutics,* Hyman; *Hydrotherapy for Physicians, Architects and Nurses,* Reprint 1950, Baruch, W. B. Saunders Company, Philadelphia and London.

Sexual Fear, Hirsch, 1st edition, Garden City Publishing Co., Garden City, N. Y.

Principles and Practice of Surgery, Berman; *Psychology, Principles and Application,* Madigan, C. V. Mosby Company, St. Louis.

The Physician Examines the Bible, Smith, Philosophical Library, New York.

Serology with Lipid Antigen, Kahn, 1st edition, Williams and Wilkins, New York.

Diagnosis and Treatment of Endocrine Disorders in Childhood and Adolescence, Wilkins; *Radiation Therapy, Management of Cancer of the Uterine Cervix,* Cantril; *Plasma Clot Suture, Peripheral Nerves and Nerve Roots,* Tarlov; *Neurosis and Psychosis,* 1st edition, Bosselman and Gerty; *Regulation of Blood Pressure and Heart Rate,* 1st edition, Heymans; *Thromboembolic Conditions, Treatment with Anticoagulants,* Marple and Wright; *Urgent Diagnosis, Without Laboratory Aid,* Baur, Charles C. Thomas, Springfield, Ill.

Physicians and Nurses Concise Medical Encyclopedia, Kupper, Biblion Press, Los Angeles.

SUMMARY OF SERVICE

Local users, 63.	Borrowers by mail, 120.
Items borrowed, 132.	Packages mailed, 73.

Films loaned, 52.

MOTION PICTURE FILM LIBRARY

Motion picture films on medical subjects, 16 mm., both silent and sound, some in color, and suitable for either medical or lay audiences, are available for loan to county medical societies, hospital staffs, or individual physicians, on request. Borrowers will be required to pay only the cost of shipment of the films, by express, with insurance, and for any damage to films in the hands of the borrower.

Request for films should be addressed to "Motion Picture Film Library, State Medical Association of Texas, 700 Guadalupe Street, Austin, Texas." A list of available films, with descriptions, will be furnished on request.

The following motion picture films were loaned by the Film Library during October:

A.M.A. Newsreel (American Medical Association, Department of Public Relations)—Washington County Medical Society, Brenham, and Dr. C. G. Goddard, Bastrop.

Anesthesia, Regional (Winthrop Chemical Company)—Arlington State College Pre-Medical Club, Arlington.

Antitoxins, Globulin Modified (Lederle Laboratories)—Biology Students, University of Houston, Houston.

Appendicitis in Childhood (Mead Johnson)—Alpha Epsilon Delta, University of Texas, Austin.

Ascorbic Acid and Scurvy (Mead Johnson)—Dr. N. L. Schiller, Austin.

Breast Cancer: The Problem of Early Diagnosis (American Cancer Society)—Brackenridge Hospital School of Nursing, Austin; Washington County Medical Society, Brenham; and Dr. N. L. Schiller, Austin.

Breech Extraction with Forceps (Mead Johnson)—Dr. E. E. Miller, Beeville.

Bronchial Asthma (E. Fougera and Company)—Dr. N. L. Schiller, Austin.

Cancer: The Problem of Early Diagnosis (American Cancer Society)—Dr. R. W. Loveless, Bastrop.

Cardio-Vascular Anomalies, Congenital, Amenable to Surgery (Mead Johnson)—Karnes-Wilson Counties Medical Society, Kenedy.

Cerebral Palsy, Treatment, Training and Education (Dr. Herbert Hipps)—Dr. N. L. Schiller, Austin.

Cesarean Section, Low Cervical (Mead Johnson)—Dr. E. E. Miller, Beeville.

Chest Diseases, Surgery in (British Information Services)—Premedical Students and Alpha Epsilon Delta, Baylor University, Waco.

Choose to Live (U. S. Public Health Service and American Cancer Society)—Vernon Clinic Hospital, Vernon.

Coming Home (Texas Tuberculosis Association)—Junior Chamber of Commerce and Rotary, Lions, and Kiwanis Clubs, Pampa.

Conquering Darkness (Dr. V. R. Hurst)—Gonzales High School, Gonzales.

Electric Shock Therapy in Depressions, In Patient and Out Patient (Drs. Melbourne J. Cooper and James R. Blair)—Baptist Memorial Hospital, San Antonio, and Drs. Hyslop and Hyslop, Del Rio.

Eyes for Tomorrow (Hurst Eye, Ear, and Throat Hospital-Clinic)—Gonzales High School, Gonzales.

Forty Billion Enemies (Westinghouse Electric and Manufacturing Company)—Scott and White Hospital School of Nursing, Temple.

From Moo to You (The Borden Company)—Latin-American Parent-Teachers Association, Ozona.

Gastrectomy, Safer (Billy Burke Productions)—Wichita Falls Clinic Hospital, Wichita Falls, and Karnes-Wilson Counties Medical Society, Kenedy.

Golden Glory (Standard Brands)—Texas Tuberculosis Association Headquarters, Austin.

Hemicolectomy for Carcinoma of the Right Side of the Colon (Dr. Philip Thorek)—Drs. Hyslop and Hyslop, Del Rio.

Hypodermic Syringes and Needles: Their Care and Function (Becton, Dickinson and Company)—Buda Clinic and Hospital, Buda.

Immunization Against Infectious Diseases (Lederle Laboratories)—Biology Students, University of Houston, Houston.

Injuries, Athletic, Care and Prevention (Becton, Dickinson and Company—Gonzales County Medical Society, Gonzales.

Lease on Life (U. S. Public Health Service)—Kiwanis Club, Tulia.

Lesions of Vulva, Vagina and Cervix (Dr. Karl J. Karnaky)—St. Luke's Surgical Seminar, St. Luke's Hospital, Denver.

Let My People Live (Texas Tuberculosis Association)—Voorhies Health Clinic, Palestine.

Management of the Failing Heart (Varick Pharmacal Company)—University of Texas Medical Branch, Galveston, and Hill County Medical Society, Hillsboro.

Normal Delivery (Mead Johnson)—School of Social Work, University of Texas, Austin.

Nutrition in Wound Healing (California Fruit Growers)—Dr. N. L. Schiller, Austin.

On Our Own (National Foundation for Infantile Paralysis)—Woman's Auxiliary to the Jasper-Newton Counties Medical Society, Jasper.

Once upon a Time (Metropolitan Life Insurance Company)—Dr. John W. Reagan, Beeville.

Plain Facts (American Social Hygiene Association)—Voorhies Health Clinic, Palestine.

Pneumonia (Mead Johnson)—University of Houston, Houston.

Polio—Diagnosis and Management (British Information Services)—Voorhies Health Clinic, Palestine.

Poliomyelitis, Sister Kenny Method of Treatment of (Dr. Herbert Hipps)—Woman's Auxiliary to the Jasper-Newton Counties Medical Society, Jasper.

Problem Child (Pet Milk Company)—Latin American Parent-Teachers Association, Ozona; and Vernon Clinic-Hospital, Vernon.

Pyloric Stenosis, Congenital, Surgical Treatment for (Dr. Philip Thorek)—Dr. N. L. Schiller, Austin.

A Stitch in Time (American Medical Association)—Kiwanis Club, Wellington.

TB, This Is (Texas Tuberculosis Association)—Kiwanis Club, Tulia.

Techniques of Injection (Becton, Dickinson and Company)—Vernon Clinic Hospital, Vernon.

They Also Serve (American Medical Association)—Harris County Hospital Staff Meetings, Houston.

Thoracic Surgery (United States War Department)—Scott and White Hospital School of Nursing, Temple.

To Your Health (Michigan Medical Society)—Rotary Club, Beeville.

Tuberculosis, Diagnostic Procedure in (Texas Tuberculosis Association)—Dr. R. W. Loveless, Bastrop.

Tuberculosis—Role of the Public Health Nurse in (Texas Tuberculosis Association)—University of Houston, Houston.

Varicose Veins and Their Complications (Becton, Dickinson and Company)—Scott and White Hospital School of Nursing, Temple.

Varicose Veins, Treatment of (G. D. Searle and Company)—Washington County Medical Society, Brenham.

What Is Cancer? (American Cancer Society)—Buda Clinic and Hospital, Buda.

When Bobby Goes to School (Mead Johnson)—Parent-Teacher Association, Willis High School, Conroe.

BOOK NOTICES

[1]Transactions of the Association of American Physicians

Vol. 42, Sixty-Second Session held at Atlantic City, N. J., May 3 and 4, 1949. Cloth, 308 pages. $6. Philadelphia, Dornan, Printer, 1949.

The organization the transactions of which are reported in this book is comprised of the finest internists, teachers, research workers, and medical practitioners in our country. Their papers represent the country's newest and best efforts in the fields of diagnosis and treatment.

The subject matter can be suggested briefly by a reference to some of the papers. McDermott and others report the successful use of Chloromycetin in typhoid fever. Kneeland discusses the use of aureomycin in primary atypical pneumonia. Hench, Kendall, Slocumb, and Polley describe their epoch-making experiences with Cortisone and ACTH. Tillett and his colleagues explain the beneficial effects of streptococcal enzymes on clotted and thick purulent body exudates. Wesley Spink reports 225 cases of brucellosis. Reimann describes cases of histoplasmosis resembling sarcoidosis. Many other papers just as interesting are included.

The author index reads like a "Who's Who" of American internal medicine. Topics discussed are fraught with immediate interest and importance.

[1]*W. W. Bondurant, M. D., San Antonio.*

[2]Case Studies in the Psychopathology of Crime

Ben Karpman, M. D., Senior Medical Officer and Psychotherapist, St. Elizabeth's Hospital, Washington, D. C. Vol. 3, 834 pages. Vol. 4, 874 pages. $17.50 each. Washington, D. C., Medical Science Press, 1948.

As the author states repeatedly, these two large volumes are offered as a source book of detailed raw material obtained from criminal patients of different categories. In a field so vital and one in which physicians will find themselves with mixed feelings—feelings for the patient on the one hand and for the victims and the social implications on the other—it seems appropriate to present material without any interpretation or conclusion.

This is no handy digest of the author's experience and conclusions on the subject, though much of his philosophy can be obtained from the general preface. It is important that he purports to give only psychologic and psychogenic studies with no claim that these are the only factors. His analysis of the limitations of the sociologic approach seems sound. The reader is deeply impressed by the warmth, genuine interest, and humanitarian spirit with which the author approaches his patients—an attitude which has far-reaching value in all phases of medical practice. The therapeutic results are somewhat disappointing, but this would be expected in the difficult situation which the author tackles. It is unfortunate that the cases could not have been followed up in more detail. Also, it would seem that the author could have described more of his contact with the individual patient without prejudicing the material from a scientific viewpoint.

The presentation is limited in its appeal to zealous students who are willing to grind away for hours in an attempt to solve this vast and complex human problem. For these students, especially for physician students, the volumes are highly recommended.

[2]*Don Morris, M. D., Dallas.*

[3]A Manual of Physical Therapy

Richard Kovacs, M. D., Professor of Physical Medicine, New York Polyclinic Medical School and Hospital; Attending Physical Therapist, Manhattan State, Harlem Valley State, and Columbus Hospitals; Area Consultant, Veterans Administration; Consultant, Physical Medicine, Surgeon General, Department of Army. Fourth edition. Cloth, 328 pages. $3.75. Philadelphia, Lea and Febiger Company, 1949.

As the name implies, this book is a manual giving in considerable detail the use of the main physical therapeutic methods now available. It includes chapters on heat and light, electricity, hydrotherapy, and massage and exercise. Not only is the technique of application described, but the background of physics and the physiologic effect involved

[3]*Frederick C. Lowry, M. D., Austin.*

in each method is thoroughly discussed. There is an excellent chapter on the use of physical therapy in trauma.

This book should serve as a basic text for anyone interested in physical therapy.

[4]Nursery School Guide

Rhoda Kellogg, Supervisor, Golden Gate Nursery Schools, San Francisco. Cloth, 501 pages. $4. Boston, Houghton Mifflin Company, 1949.

This comprehensive and detailed book reflects the author's intimate experience with the management of a nursery school. It is recommended for anyone who is planning to establish a nursery school.

[5]Headache and Other Head Pain

Harold G. Wolff, M. D., Professor of Medicine (Neurology) and Associate Professor of Psychiatry, Cornell University Medical College; Attending Physician, New York Hospital, New York. Cloth, 642 pages. $12. New York, Oxford University Press, 1948.

This book gives a systematic discussion of each type and kind of head pain. Numerous experiments in support of the author's conclusions are offered. There is occasionally a rather arbitrary and pedantic point of view, for example, the complete and utter disavowal of histaminic headache. However, a mass of detailed and interesting information is conveniently summarized chapter by chapter. The book should offer a great deal to any reader.

[6]Yearbook of Dermatology and Syphilology, 1949

Marion B. Sulzberger, M. D., Professor and Chairman, Department of Dermatology and Syphilology, Post-Graduate Medical School; Director of Dermatology and Syphilology, Skin and Cancer Unit and University Hospital, New York University-Bellevue Medical Center; and Rudolf L. Baer, M. D., Assistant Professor of Clinical Dermatology and Syphilology, Post-Graduate Medical School; Attending, Skin and Cancer Unit, New York University-Bellevue Medical Center. Cloth, 514 pages. $5. Chicago, Year Book Publishers, 1949.

The book is divided into thirteen sections which include the various types of dermatoses and investigative studies which have been reported. A short section on the management of acne vulgaris includes vaccine therapy, dietary regimens, topical therapy, the antibiotic drugs, and physical therapy. This excellent discussion will aid anyone who treats acne vulgaris.

In the section on treatment and prevention, several articles are outstanding. One deals with atopic eczema and the use of 5 per cent DDT in papular urticaria. Also, Vioform, Diodoquin, ammoniacal silver nitrate, and other medicaments which have been observed to be of use in dermatology are discussed. Aureomycin is reported to be of definite value in Kaposi's varicelliform eruption.

One article on penicillin sensitivity in the section on drug eruptions particularly shows that a strict predominance of penicillin sensitivity exists in man. In the section on eczema, urticaria, and allergy are numerous articles on sensitivity to various substances and also some excellent articles on photosensitivity.

The discussion of lupus erythematosus and the lupus erythematosus cell in the hematogenous dermatoses section is just one of many interesting articles on this type of dermatoses. The article on nevi in the section on tumors, should be of interest to everyone.

One portion of the book on syphilis presents some preliminary reports on the use of aureomycin and Chloromycetin in the treatment of this disease. Several reports of treatment of syphilis with penicillin are included. In regard to the other venereal diseases, several articles explain the use of the newer antibiotic drugs in the treatment of lymphogranuloma venereum and granuloma inguinale.

The final section regards investigative studies, many of which are enlightening and which no doubt will lead to the development of many new therapeutic agents.

[7]Physiology of Heat Regulation and the Science of Clothing

L. H. Newburgh, M. D., Professor of Clinical Investigation, Medical School, University of Michigan. Cloth, 457 pages. $7.50. Philadelphia, W. B. Saunders Company, 1949.

This monograph was prepared at the request of the Division of Medical Sciences, National Research Council. It represents the combined effort of well known experts in the field of heat regulation. The book attempts to describe the responses of the heat regulatory mechanism to a wide range of climatic conditions. It points out the maximal capacity of these mechanisms and the influence of protective coverings on the preservation of life and well being in unfavorable environments.

Written in a highly scientific language, the book will be of great interest to physiologists and to clinical investigators who are interested in problems of heat regulation. A synthesis of the most important conclusions reached by the individual authors would have been highly desirable.

[8]Rehabilitation, Re-Education and Remedial Exercises

Olive F. Guthrie Smith, M.B.E., F.C.S.P. (Hon.), T.M.G. Cloth, 456 pages. $6. Baltimore, Williams and Wilkins Company, 1949.

This book deals mainly with the rehabilitation of patients through active exercises. The author describes in detail the various springs and pulleys used in overcoming gravity and allowing the exercise of weakened muscles. She shows how various types of apparatus may be utilized for graduated exercise. The mechanical application of the apparatus involved is ingenious. The methods used by the author repeatedly emphasize the value of active exercise as opposed to passive movement.

While this book will be of greatest value to the physical therapist or orthopedic surgeon, it also should be of interest to any physician handling fractures or chronic diseases.

[9]The Physiological Basis of Medical Practice

Charles Herbert Best, M. D., D. Sc. (London), F.R.S., F.R.C.P. (Canada), Professor and Head of Department of Physiology, Director of the Banting-Best Department of Medical Research, University of Toronto; and Norman Burke Taylor, M. D., F.R.S. (Canada), etc., Professor of History of Medicine and Medical Literature, University of Western Ontario, London, Canada. Fifth edition. Fabricord, 1,330 pages. $11. Baltimore, Williams and Wilkins Company, 1950.

It is fitting that a book covering so much of the practice of medicine be brought up to date often. Much progress has been made since the fourth edition was published in 1945. The preface to the fifth edition calls attention to the addition of more than 100 new illustrations, as well as to an increase in the size of the book.

For the medical student this book on physiology is an excellent introduction to medicine. The book correlates, though briefly at times, pertinent factors of treatment with pathology, anatomy, and physiology. For the clinician the book is not only a physiology text but a valuable reference work.

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[4]*Clifford Thorne, M. D., Austin.*
[5]*Wylie F. Creel, M. D., Austin.*
[6]*M. Allen Forbes, Jr., M. D., Austin.*
[7]*Andres Goth, M. D., Dallas.*
[8]*Frederick C. Lowry, M. D., Austin.*
[9]*W. P. Morgan, M. D., Austin.*

Of necessity it is impossible to write extensively on the many subjects covered. The authors tend to condense parts to keep the book practical. Vitamin B_{12}, cortisone, and ACTH, for example, are handled almost in abstract form.

A complete set of references is included. The volume is recommended as an improvement on a previously excellent book.

[10]Clinical Therapeutic Radiology

U. V. Portmann, M. D., Head of Department of Therapeutic Radiology, Cleveland Clinic Foundation; Professor of Therapeutic Radiology, Bunts Educational Institute, Cleveland, Ohio. Cloth, 748 pages. $15. New York, Thomas Nelson and Sons, 1950.

The book is a complete discussion of modern radiation therapy. It might be regarded as a group of monographs, for each chapter is a complete discussion of radiation therapy of some particular organ or system. The large number of contributors are well known in the field of their particular contributions.

Radiation therapy of the female genital tract is completely discussed and includes a complete discussion of intracavitary, interstitial, and transvaginal radiation therapy. Each of these methods of treatment of carcinoma of the cervix is fully discussed by a different contributor.

The volume is well limited to the clinical phases of radiation therapy, and physics and pathology are eliminated as much as possible. Rather complete discussions on neglected subjects such as radiation protection, contact roentgen therapy, supervoltage radiation, hormonal alteration of neoplastic diseases, medical use of isotopes, and care of patients receiving radiation therapy are included.

This is a valuable addition to the library of anyone particularly interested in the details of radiation therapy.

[11]1949 Year Book of Orthopedics and Traumatic Surgery

Edward L. Compere, M. D., F.A.C.S. Cloth, 464 pages. $5. Chicago, Year Book Publishers, 1950.

Edward L. Compere, an authority in the field of traumatic and orthopedic surgery, has compiled recent literature in the field and has summarized each paper to bring the articles to the reader in excellent form. After a large number of the papers he has added his personal views; with some papers he agreed and with others he issued a word of caution.

The materials grouped in chapters present views on the same subject from throughout the country. In effect this gives a symposium on many controversial matters. The subjects are well covered and excellently presented. This well written and interesting book is an excellent review for members of the medical profession who do not have the time or inclination to read through a tremendous amount of literature.

Recently many advances have been made in the field of orthopedic surgery, and it is extremely difficult for textbooks adequately to keep abreast of this material. This book meets the yearly needs in this respect.

[12]The Physiology of Tissues and Organs

Douglas H. K. Lee, M. D., M. Sc., D.T.M., F.R.A.C.P. Cloth, 159 pages. $4. Springfield, Ill., Charles C. Thomas, 1950.

This volume apparently represents the substance of the author's lectures in physiology at Johns Hopkins University. He has gone to a great deal of effort in setting forth only the basic facts for students of medicine studying physiology. The book is not intended to be comparable to the large textbooks of physiology now existing, but rather is a guide to the more important details which should be obtained at length from the large classic texts, such as Best and Taylor's work.

The first portion of the volume deals with such general principles as mass action, cell membrane behavior, and excitation waves along muscle and nerve. There follows a general discussion of the physiology of tissues, organs, and systems.

[13]Differential Diagnosis of Chest Diseases

Jacob Jesse Singer, M. D., F.A.C.P., F.C.C.P., Medical Director of the Rose Lampert Graff Foundation, Beverly Hills, Calif.; Consultant in Chest Diseases, Cedars of Lebanon Hospital, Los Angeles. Cloth, 344 pages. $7.50. Philadelphia, Lea and Febiger Company, 1949.

Until the beginning of this century the surgeon rarely operated upon the chest except in accidents and to evacuate fluid from the pleural cavity. Now such surgery is routine because of recent advances in laboratory technique, the discovery of the roentgen ray, the bronchoscope, and new remedies to help fight infection.

Two factors influence the patient in his visits to the doctor's office—pain and fear—and both are liars. Pain always brings him in but often after it is too late to help. Fear keeps him away because he does not want to face the truth.

Dr. Singer emphasizes that many diseases develop insidiously and painlessly and warns the doctor to be on the lookout for symptoms while the disease is curable. He enumerates the abnormal conditions in the chest and the steps necessary to diagnose them, stressing the use of the roentgen ray, the bronchoscope, and the newer staining methods of microscopic study of biopsy material.

The sulfonamides and the new antibiotic drugs have defeated most acute infections, but tuberculosis is still prevalent and a new enemy—malignancy—is beginning to loom large. Malignancy was largely overlooked by older diagnostic methods but it can be detected now while the condition is operable.

The language of the book is concise, the volume is well illustrated, and the bibliography covers most of medicine. The thoracic specialist will cherish the book as one of his choice volumes, and to the busy general practitioner with limited reading time, it is highly recommended.

[14]The Invert and His Social Adjustments

Anomaly, with an introduction by R. H. Thouless, M. A., Ph. D. Cloth, 290 pages. $3. Baltimore, Williams and Wilkins Company, 1948.

This is a book writen by an anonymous author who professes to have been an invert (homosexual) for the past fifty years. The first edition appeared in 1927 and the present edition instead of being revised contains a sequel of ten chapters.

The author presents an intelligent and sympathetic understanding of a problem which has vexed many physicians, who so often become counselors to inverts or their families. He regards homosexuality as "a functional disorder, related to the psychoneuroses, which like the psychoneuroses has its origin partly in hereditary factors and partly in the environmental influences acting in early childhood." The author traces the origin and development of inversion, delineates the symptoms of the disorder with scientific cautions, discusses the moral and ethical issues confronting the invert, and points out the necessity for a better understanding of this unfortunate person by all segments of society. No definite cure has been found for the condition, according to the author's knowledge. He therefore admonishes those who have

[10]*R. P. O'Bannon, M. D., Fort Worth.*
[11]*P. M. Girard, M. D., Dallas*
[12]*T. H. Capers, M. D., Temple.*
[13]*A. J. Pollard, M. D., Harlingen.*
[14]*A. Hauser, M. D., Houston.*

this make-up, especially physicians, to use much discretion in their actions. In the sequel the author offers an interesting explanation of the invert in what he terms the theory of "polarity."

The author has an easily read style, the book is relatively short, and the fact that the author speaks from close intimacy with the subject gives the book a special air of authority. Every physician will derive important information from "The Invert" and he should become familiar with the book, if only to aid those who are in need of this type of information from an authoritative source.

[15]Amputation Prosthetic Service

Earle H. Daniel, Director of Prosthetic Service, Institute of Physical Medicine and Rehabilitation, New York University, Bellevue Medical Center; Prosthetic Consultant to Bellevue, City, Goldwater Memorial, Metropolitan, and University Hospitals, New York. Cloth, 326 pages. $7. Baltimore, Williams and Wilkins Company, 1950.

This book covers with great thoroughness the entire field of the amputee. The revision of amputation stumps, the types and the fitting of prosthesis, teaching and training in the use of a prosthesis, and many other factors in the field are adequately and competently covered.

Of particular importance to the surgeon is chapter 1 dealing with the sites of amputation. From a close study of the book the physical therapist and rehabilitation worker can gain valuable knowledge for training amputees in the care of the stump and the use of their limbs.

As a whole, this well written book, full of extremely useful information, is well worth reading.

[16]The Ethical Basis of Practical Medical Practice

Willard L. Sperry, Dean of the Harvard University Divinity School, Cambridge. Cloth, 183 pages. $2.50. New York, Paul B. Hoeber, 1950.

This interesting and instructive book partly covers the field in the title. The writing is broad, agreeable, and understanding and should promote instructive discussions of a subject that needs more careful thought.

[17]Streptomycin and Dihydrostreptomycin in Tuberculosis

H. McLeod Riggins, M. D., New York, and H. Corwin Hinshaw, M. D., San Francisco, editors. Cloth, 554 pages. $7.50. New York, National Tuberculosis Association, 1949.

This volume depicts the findings of many investigators of streptomycin, dihydrostreptomycin, and para-aminosalicylic acid (PAS) from discovery of the drugs to early 1949. The development of streptomycin, the way it inhibits tubercle bacilli growth in vitro and in vivo, the method by which it produces resistant strains, complications, and so forth are thoroughly depicted. Dihydrostreptomycin, which now has almost replaced streptomycin in most instances, and PAS, to a much lesser extent, are similarly considered. Many original articles by many authors are included. The study was made possible by the close cooperation of the American Trudeau Society, which did the bulk of the investigative work; several drug manufacturers who furnished the drugs; and the Division of Research and Fellowships of the U. S. Public Health Service.

[18]Personality in Peptic Ulcer

Albert J. Sullivan, M. D., Head of Section on Gastroenterology, Ochsner Clinic, and Lecturer in Medicine, Tulane University of Louisiana School of Medicine; and Thomas E. McKell, M. D., Member of Section on Gastroenterology, Ochsner Clinic, and Instructor in Medicine, Tulane University of Louisiana School of Medicine, New Orleans. Cloth, 100 pages. $3. Springfield, Ill., Charles C. Thomas, 1950.

The idea of an "ulcer personality" is not new, and this is not the first time the theory of multiple etiology has appeared in medical literature. However, the use of cartoons to illustrate the ulcer personality and a mathematical formula stating the relationships within multiple etiologies is both novel and original. No doubt eyebrows will be lifted at the implication that the ulcer outlaw obeys any fixed rule or formula, but the authors submit the idea just the same; maybe they have something.

After an excellent discussion of emotional factors in peptic ulcer in the first chapter, a number of brief articles appear. In a presentation of the multiple etiology theory the cartoons are effectively utilized. An outline of the "ulcer personality" concept offers the formula of the relationships of multiple etiologies. Finally the clinical application of the theory is shown in 18 brief case descriptions.

Many readers will be disappointed at the large number of assumptions they are asked to accept without supportive clinical or other scientific data. It is also to be regretted that the case material, said to include more than 1,000 persons, is not available in statistical review.

It occurs to this reviewer that conclusions such as are drawn here are subject to the same fallacies that now are known to have existed in the presurvey period of tuberculosis control. Until some accurate method applicable to the total adult population for determining the actual incidence of ulcer, including its recurrence rate, can be devised, final or even valid conclusions regarding its etiology or the personality types of its victims cannot be drawn.

This is an important book but it will need extensive revision to meet the logical criticism merited in its present form. There has long been a need for a concise, practical statement of the ulcer complex that would serve to orient the practitioner in his approach; this could be the book to do just that. I hope the authors will rise to the occasion—and soon.

[15]*Herbert Hipps, M. D., Waco.*
[16]*E. A. Cayo, M. D., San Antonio.*
[17]*Sim Hulsey, M. D., Fort Worth.*
[18]*J. Edward Johnson, M. D., Austin.*

ORGANIZATION SECTION

AMERICAN MEDICAL ASSOCIATION

Medical Public Relations Conference

A medical public relations conference will be held in conjunction with the clinical session of the American Medical Association in Cleveland on December 3 and 4.

Dr. John W. Cline, San Francisco, President-Elect of the A.M.A., will speak on "Serve Your Nation Through Better Public Relations," and other officers of the Association will talk. Working sessions will cover the following topics: groundwork, the county medical society and the political scene, activities with a purpose, and idea exchange.

Cleveland Clinical Session

The fourth clinical session of the American Medical Association will be held in Cleveland from December 5 to 8. The program, which has been planned primarily for the general practitioner, is described in some detail on page 790 of the October, 1950, JOUBNAL. Physicians who plan to attend the session should register in advance by sending their name, address, and notice of membership in a state medical association and the names of others who will accompany them to the A.M.A. office, 535 North Dearborn Street, Chicago 10. Hotel reservations should be made through Dr. I. M. Hinnant, chairman of the A.M.A. Housing Committee, 511 Terminal Tower, Cleveland.

REPORT ON LEGISLATION

Representatives of five southern states met in Dallas on October 24 to hear firsthand reports from Dr. Joseph S. Lawrence, director of the Washington office of the American Medical Association, and his assistant, Mr. Foristel.

Dr. Lawrence reviewed much of the legislation which was proposed during the last session of Congress, reported on the present status of the bills, and outlined probable future legislation.

Representatives of various medical groups from Arkansas, Mississippi, Louisiana, and Oklahoma attended the session. Texas groups were represented by Dr. F. J. L. Blasingame, Wharton, A.M.A. and State Medical Association trustee; Dr. B. E. Pickett, Carrizo Springs, A.M.A. delegate; Dr. Truman C. Terrell, Fort Worth, A.M.A. delegate and chairman of the Board of Trustees of the State Medical Association; Dr. William M. Gambrell, Austin, President of the Texas Association; Mrs. William M. Gambrell, Austin, President of the Woman's Auxiliary to the State Medical Association; Mrs. O. W. Robinson, Paris, President-Elect of the Auxiliary; Dr. Allen T. Stewart, Lubbock, President-Elect of the Association; Dr. George Schenewerk, Dallas, chairman of the Committee on Public Relations; Philip R. Overton, Austin, general attorney; and Tod Bates, Austin, Executive Secretary.

STATE MEDICAL ASSOCIATION

BUILDING PLANS PROGRESS

Working plans for the new State Medical Association Headquarters and Library Building were progressing rapidly as this JOURNAL went to press and were expected to near completion by November 15. On that date, final recommendations from the Building Committee and the Building Finance Committee were to be considered, and it is anticipated that bids can be sought prior to December 1.

Few changes have been made in the original basic plans which call for a two story and basement structure of approximately 33,000 square feet. The basement will house utility machinery, workshops, dark room, storage space, and book stacks for library expansion as well as an apartment for the building superintendent.

The first floor will contain the main foyer and reception room, reading rooms, research and reference rooms, stack room for library volumes, rare books and board room, projection room, film storage, workroom, shipping and receiving rooms, supply room, and offices for the librarian and assistants. Also on the first floor will be the lounge, which can be converted into an auditorium seating several hundred, equipped with motion picture projectors of necessary types.

A mezzanine between the first and second floors will accommodate additional book stacks.

The second floor will house the general offices, office of the Executive Secretary, reception room, business and editorial offices of the JOURNAL, central files, storage, public relations offices, and work and mail rooms. An outside terrace is included in the second floor plan.

The first and second floors are to be air conditioned throughout, and the lounge will be equipped with a utility kitchen.

Site for the building is at Nineteenth and Lamar Streets in Austin and present plans call for attractive landscaping of the surrounding grounds, which already contain many shade trees.

Television Committee for Annual Session

Following the decision of the Smith, Kline, and French Laboratories of Philadelphia to bring its colored television exhibit to Galveston for the 1951 annual session of the State Medical Association, Dr. William M. Gambrell, Austin, President, has named a Committee on Television to work up a program of surgical operations and medical clinics. Members of the committee are Drs. R. M. Moore, Galveston, chairman; Russell J. Blattner, Houston; G. V. Brindley, Temple; John J. Hinchey, San Antonio; Frank A. Selecman, Dallas; R. T. Travis, Jacksonville; and W. B. West, Fort Worth. The telecasts will originate in St. Mary's Hospital and will be received on the Galveston Pleasure Pier.

Members of the Association interested in contributing scientific exhibits or papers for the annual session, scheduled for May 1-2, should apply to Dr. X. R. Hyde, chairman, or Dr. James D. Murphy, co-chairman, of the Committee on Scientific Exhibits, Medical Arts Building, Fort Worth, or to the officers of the appropriate scientific section, whose names appear in the June JOURNAL, page 462. Motion picture films for showing at the session should be shipped to the Library of the State Medical Association, 700 Guadalupe Street, Austin, for review. Contributions for programs of the scientific sections should be submitted promptly; final selection of papers will be made at the mid-January meeting of the Council on Scientific Work. Applications for space for scientific exhibits and motion pictures for review will be accepted until February 25.

COUNTY SOCIETIES

Bell County Society

August 2, 1950

(Reported by E. O. Bradfield, Secretary)

Gastroscopic Diagnosis of Stomach Lesions—Merton Minter, San Antonio.

The Bell County Medical Society met in Temple on August 2 with eighty-eight members present. Unanimously elected to membership on motion made by Charles Phillips were the following: Virgil A. Page, Jr., Cyrus L. Hay (resident), and W. T. Jay, Jr. (resident).

A committee report regarding children's certificates after absence from school because of illness was made. It was recommended that certificates be issued by physicians, inasmuch as the two diseases for which certificates will be required, diphtheria and scarlet fever, by their nature should necessitate a physician's care. Dr. Phillips moved that the report be adopted as read and that it be sent to the school board as the recommendation of the society. The motion was seconded and carried.

E. O. Bradfield suggested that each member write a letter of appreciation to Congressman W. R. (Bob) Poage for voting against President Truman's Reorganization Plan.

The president appointed the following to an advisory committee to the auxiliary: A. Ford Wolf, chairman, and R. R. Curtis, J. R. Kilman, and Charles H. Cox, Jr., all of Temple.

Philip Kline presented a short motion picture in keeping with Dr. Minter's talk on "Gastroscopic Diagnosis of Stomach Lesions."

Brazoria County Society

September 28, 1950

(Reported by W. T. Galloway, Secretary)

Infectious Diseases of Skin and Special Treatment of Burns of Skin—T. G. Blocker, Jr., Clarence S. Livingood, and Martin Schneider, Galveston.

After a dinner in Freeport on September 28 with members of the auxiliary, Brazoria County Medical Society heard the above scientific program, which included a resumé of the most recent open air treatment for burns of all types.

W. D. Nicholson, Freeport, discussed the situation concerning drafting of physicians into military service.

Brown County Society

August 29, 1950

A called meeting of Brown - Comanche - Mills - San Saba Counties Medical Society was held August 29 in Brownwood to discuss procurement of doctors for the armed forces. A plan whereby the local society will participate in the procurement program and will assist in selection of doctors to meet military quotas was outlined.

Dallas County Society

September 12, 1950

(Reported by W. W. Fowler, Secretary)

Recent Therapeutic Advances in Gastrointestinal Disorders—Joseph B. Kirsner, Chicago.
Medical Economic News—Mr. Millard Heath, Dallas.

Dr. Kirsner, associate professor of medicine at the University of Chicago, and Mr. Heath, executive secretary of Dallas County Medical Society, spoke on the above topics at the September 12 meeting of the society in Dallas. Elliott Mendenhall, president, presided and introduced Charles H. Burnett, a new professor of medicine at the Southwestern Medical School, Dallas.

Eight physicians were elected to membership by application and five by transfer. Resolutions on the deaths of Dr. Sam Webb, Dr. W. L. Edwards, and Dr. Harry E. Nelson were read.

The president announced the following members of the procurement and assignment committee: Tate Miller, chairman, and F. H. Newton, Guy Denton, Sr., G. E. Brereton, David W. Carter, Jr., Wayne T. Robinson, and Edward White. Dr. Mendenhall said that to date this committee had no official status or duties but was being appointed at the request of the State Medical Association.

Everett Fox reported on the status of the revision of the constitution and by-laws, stating that they had been approved by the Board of Councilors and the legal counsel for the Association and that they had been published in the August issue of the Dallas *Medical Journal*. He moved that this presentation be considered the official reading and that action be taken at a subsequent meeting. Dr. Miller seconded and the motion carried.

October 10, 1950

(Reported by W. W. Fowler, Secretary)

A Tribute to Charles M. Rosser—J. Harvey Black, Dallas.
Potentialities and Limitations of Sympathetic Nerve Surgery—Harris B. Shumacker, Jr., Indianapolis.
Response—Elliott Mendenhall, Dallas.

The Dallas County Medical Society met October 10 in Dallas for the first annual Charles M. Rosser Lecture. Dr. Shumacker, professor of surgery at the Indiana University Medical Center, was the lecturer. The program is given above.

Discussion and action on the proposed revision of the constitution and by-laws was deferred until the November meeting.

Galveston County Society

September 6, 1950

S. 4029, which provides for the drafting of doctors, dentists, and other specified professional men for military services, was discussed at the September 6 meeting in Galveston of Galveston County Medical Society.

Hamilton Ford, Galveston, and Clarence Quinn, Texas City, reported on the recent meeting of the Executive Council of the State Medical Association in Austin.

Gonzales County Society

October 11, 1950

(Reported by James C. Price, Secretary)

Athletic Injuries—Prevention and Immediate Care (motion picture).

Members of the Gonzales County Medical Society and Auxiliary were dinner guests in the home of Dr. and Mrs. D. M. Shelby, Gonzales, on October 11. The motion picture named above was shown.

Gray-Wheeler-Hansford-Hemphill-Lipscomb-Roberts-Ochiltree-Hutchinson-Carson Counties Society

September 19, 1950

(Reported by Joe R. Donaldson, Secretary)

Fibrocystic Disease of Pancreas in 17 Months Old Child: Case Report—E. S. Williams, Pampa.
Discussion—Theo C. Panos, Galveston.
Differential Diagnosis of Fever in Children—Theo C. Panos, Galveston.
Discussion—E. S. Williams, Pampa.

At the September 19 meeting in Borger of Gray-Wheeler-Hansford-Hemphill-Lipscomb-Roberts-Ochiltree-Hutchinson-Carson Counties Medical Society the scientific program was presented as outlined above. Twenty-nine members and six guests attended.

R. C. Lewis, Jr., Shamrock, was accepted for membership by application.

It was announced that American Medical Association dues for 1951 will be $25 and will include a subscription to *The Journal of the American Medical Association.*

The present status of doctors and the military service was discussed in the light of recent developments.

It was announced that the Third District Medical Society will meet in Lubbock October 3 and 4 and that the American Cancer Society district meeting will be held in Amarillo on October 6.

Grayson County Society

October 9, 1950

(Reported by G. S. Rowlett, Jr., Secretary)

Bone Marrow in Health and Disease (slides)—L. J. Flohr, Denison.

A supper meeting of Grayson County Medical Society was held in Denison on October 9. Dr. Flohr talked on the topic mentioned above.

The registration of physicians for military service was discussed.

Kimble-Mason-Menard-McCulloch Counties Society

September, 1950

Causes, Types, and Treatment of Jaundice—Richard Haines, Temple.
Modern Treatment of Diabetes—Ralph Greenlee, Temple.

The scientific program outlined above was given when Kimble-Mason-Menard-McCulloch Counties Medical Society held a quarterly dinner meeting in early September. Hugh W. Martin, Menard, reported on the meeting of the Executive Council of the State Medical Association held in Austin recently.

J. S. Anderson, Brady, was named chairman of the procurement and assignment committee for the society. P. A. Baze, Mason, was named medical adviser for the Selective Service board.

Lamar County Society

A blood bank has been opened in the Lamar County Hospital in Paris under the auspices of the Lamar County Medical Society. It is under the supervision of a board of trustees consisting of D. Scott Hammond, president; M. A. Walker, vice-president; Charles E. Gilmore, secretary-treasurer; Mr. Benton Fisher; and Mr. Gilbert Cecil, all of Paris.

Medina-Uvalde-Maverick-Val Verde-Edwards-Real-Kinney-Terrell-Zavala Counties Society

September 8, 1950

Opportunities of Postgraduate Medical Training in Texas—Charles S. Venable, San Antonio.
Gastric Resection—J. J. DeLeon, San Antonio.
Hernia Repair—Edward W. Coyle, San Antonio.

A dinner meeting of Medina-Uvalde-Maverick-Val Verde-Edwards-Real-Kinney-Terrell-Zavala Counties Medical Society was held September 8 in Uvalde. J. D. Williamson, Castroville, presided, and eighteen members and six guests attended. The scientific program outlined above was presented.

The procurement and assignment of doctors for military service was discussed.

Pecos-Jeff Davis-Presidio-Brewster Counties Society

September 13, 1950

(Reported by W. E. Lockhart, Secretary)

Radiation Treatment of Cancer—George Turner, El Paso.
Surgical Treatment of Cancer—Leigh E. Wilcox, El Paso.
Pathology of Cancer—Hurston F. Heslington, El Paso.

Joel Wright presided in a special session September 13 in Alpine of the Pecos-Jeff Davis-Presidio-Brewster Counties Medical Society at which Dr. Turner, councilor for the First District, was a special guest. Dr. Turner spoke during the scientific program, which seven members attended. The meeting was held in conjunction with a cancer education program sponsored by the Women's Study Club of Alpine.

October 3, 1950

(Reported by W. E. Lockhart, Secretary)

Guest speaker for the October 3 meeting and barbecue dinner in Alpine of Pecos-Jeff Davis-Presidio-Brewster Counties Medical Society was Francis A. Snidow, El Paso. The meeting was attended by eight members and eight guests. A motion picture "Saddle Block Anesthesia with Nupercaine" was shown through the courtesy of Ciba Pharmaceutical Products, Inc., by Malone V. Hill, Alpine.

Potter County Society

October 9, 1950

(Reported by Mrs. Cassie Atherton, Executive Secretary)

Psychosomatic Medicine—John M. Lyon, Denver.
Discussion—Roy Sloan, Amarillo.

John M. Lyon, professor of psychosomatic medicine at the University of Colorado School of Medicine, was guest speaker for a meeting of Potter County Medical Society in Amarillo on October 9. He was introduced by Howard C. Reid. The society program followed a dinner given by the Veterans of Foreign Wars to preview the Potter County Memorial Blood Center, which was to be formally opened the next day.

During the dinner meeting, Sol. Haberman, Ph. D., Dallas, representing the Southwestern Medical Foundation, addressed the group. T. P. Churchill, director of the new Potter County Blood Center, told of its history, function, and needs and paid tribute to the V.F.W., which provided a building and equipment valued at more than $10,000 for the blood center. The center will be operated as a nonprofit organization by a board of directors composed of four physicians, Howard Puckett, E. P. Reed, W. E. Scott, and Horace Wolf, and three laymen.

Despite the fact that the new building only recently has been made available, the blood center has been in operation for some time. Thirty-five employees of the Excell Helium Plant, Amarillo, gave blood to start the bank. Through a temporary arrangement with a commercial laboratory 1,600 pints of blood already have been furnished this year, and of this amount 176 pints are yet owed to the bank. Dr. Churchill impressed upon the physicians the importance of replacing the blood as soon as it has been used.

Tarrant County Society

September 19, 1950

(Reported by W. P. Higgins, Jr., Secretary)

ACTH and Cortisone—Cooper M. Conner, Fort Worth.

The meeting September 19 in Fort Worth of Tarrant County Medical Society was attended by 110 members and 2 guests. The program was given as outlined above.

Seven physicians were elected to membership by application and two by transfer. Tribute was paid to Dr. James H. Benton, Fort Worth, who died September 16.

The president, Sim Hulsey, reminded members that the medical profession is under the close scrutiny of many persons at present and that physicians should guard against statements which might result in criticism either by individuals or organizations.

Tom Bond reported on the meeting of the Executive Council held in Austin recently and informed members of the present status of military and draft legislation and of possible future developments.

J. A. Hallmark announced the first scientific meeting of the Texas Academy of General Practice, which is being held in Fort Worth on September 25, inviting all members of the society to attend.

October 3, 1950

(Reported by W. P. Higgins, Jr., Secretary)

Aseptic Gastric Resection—E. M. Cyrus, Jr., Fort Worth.
Trends in Gastric Surgery—Robert L. Sewell, Fort Worth.

Tarrant County Medical Society met October 3 in Fort Worth and the program outlined above was presented.

Two members were elected upon application. Frank Cohen announced that the Texas Pediatric Society would meet October 6 and 7 in Fort Worth and extended an invitation to members to attend. T. C. Terrell announced the meeting from October 5 to 7 in Houston of the Association of American Physicians and Surgeons.

Mr. Frank Cantwell, representative of the Metropolitan Casualty and Washington National Insurance Company, illustrated the various group policies for physicians.

Titus, Morris, and Camp Counties Society

August 28, 1950

Infectious Mononucleosis—J. Y. Bradfield, Dallas.
Diarrhea in Adults—T. R. Roberts, Dallas.

Morris County physicians were hosts for the meeting in Daingerfield on August 28 of Titus, Morris, and Camp Counties Medical Societies. Guests were members' wives; Mrs. J. Y. Bradfield, Dallas; Dr. and Mrs. A. E. Starnes, Hughes Springs; Joe D. Nichols, Atlanta, councilor for the Fifteenth District; and Joe King, Linden.

L. E. Rutledge, Daingerfield, the master of ceremonies, introduced the guest speakers, who presented the talks outlined above.

Tom Green-Eight County Society

October 2, 1950

(Reported by Perry J. C. Byars, Jr., Secretary)

Body Fluids, Electrolytes, and Nutrition—Will Horn, Fort Worth.

Thirty-seven members of Tom Green-Eight County Medical Society attended the society meeting October 2 in San Angelo.

Will Horn, Fort Worth, discussed the requirements of body fluids in normal persons and in patients suffering from certain types of diseases. He emphasized that the fluid and electrolyte balance must be maintained in preoperative and postoperative patients and discussed the appropriate types of fluids to be used in different conditions. He explained vitamin supplementation with the use of intravenous fluids and discussed acidosis and alkalosis and the types and amounts of solutions to be used in their treatment.

The president, C. A. Kunath, told of the advertising program which is to be carried on nationally by the A.M.A. Gordon A. Pilmer moved and George L. Nesrsta seconded that the society place a half page advertisement in the local paper October 11 at which time the main advertisements of the A.M.A. will be used. The motion carried.

Lloyd Hershberger reported for the cancer committee, and K. B. Round on the status of hospitals beds in San Angelo. The president stated that the city had voted $15,000 and the county $7,500 to defray hospital expenses of indigent patients. He said that a plan is being devised for the administration of these funds, that apparently a large advisory committee would set general policies, and that a small executive committee would decide the policy in individual cases. Dr. Kunath appointed the following to serve on the advisory committee: the president, Carl Kunath; public health officer, R. E. Johnson; Victor Schulze; Floyd McIntire; and W. H. Brauns.

Dr. Kunath appointed a nominating committee as follows: H. M. Anderson, chairman, and Gordon A. Pilmer, George L. Nesrsta, Jerome Smith, and H. N. Ricci.

R. R. Jones and Lacy Smith were nominated for membership on the City Board of Health by the society, and the secretary was instructed to notify the mayor of the recommendation.

An athletic committee consisting of Joseph A. Bunyard, chairman, and George L. Nesrsta, Robert M. Arledge, and Douglas J. Barry was appointed by the president to consult with respective school boards to see if arrangements could be made for the medical profession to take care of students participating in athletics.

Wood County Society

August 12, 1950

(Reported by Alvin Waller, Secretary)

Intravenous Procaine for Relief of Pain—Porter M. Bailes, Jr., Tyler.
Skin Diseases (lantern slides)—Cone Thompson, Tyler.

The Wood County Medical Society held its regular meeting August 12 in Mineola with Roscoe O. Moore, Mineola, president, presiding. Dr. Moore appointed the following to a procurement and assignment committee: Alvin L. Waller, Quitman, chairman; W. T. Black, Quitman; A. P. Buchanan, Mineola; T. H. Peterson, Mineola; and T. B. Reed, Mineola.

The scientific program was presented as outlined above.

DISTRICT SOCIETIES

Third District Society

October 3-4, 1950

(Reported by James T. Hall, Secretary)

OCTOBER 3

Invocation—The Rev. Claude F. Canterbury, Rector, Episcopal Church, Lubbock.

Call to Order and Welcoming Address—Allen T. Stewart, Lubbock, President, Third District Medical Society.

Medical Section

Otis Taylor, Lubbock, Chairman.

Frank Goodwin, Lubbock, Secretary

Normal Serum Cholesterol in Human Adult with Particular Reference to Variations with Age and its Relationship to Development of Atherosclerosis—E. R. Hayes, Dallas.
Discussion—William H. Gordon, Lubbock.

Convulsions in the Newborn—F. Henry Reynolds, Department of Pediatrics, University of Colorado, Denver.
Discussion—Arthur Jenkins, Lubbock.

Lower Nephron Nephrosis—E. E. Muirhead, Dallas.
Discussion—Brandon Hull, Lubbock.

Problems of Pyelitis in Infancy and Childhood—F. Henry Reynolds, Denver.
Discussion—J. D. Donaldson, Jr., Lubbock.

Differential Diagnosis of Jaundice with Particular Reference to Liver Function Tests—E. R. Hayes, Dallas.
Discussion—Otis Taylor, Lubbock.

Bone Marrow Aspiration as Diagnostic Aid—E. E. Muirhead, Dallas.
Discussion—John Mast, Midland.

Fever of Undetermined Origin—W. G. Reddick, Dallas.
Discussion—Myron D. Mattison, Lubbock.

Eye, Ear, Nose, and Throat Section

James T. Hall, Lubbock, Chairman.

Emerson Blake, Lubbock, Secretary.

Cancer of Head and Neck—John Charles Long, Plainview.
Discussion—Forrest Freeman, Lubbock.

What Can Be Done about Deafness—K. M. Simonton, Department of Otolaryngology, Mayo Clinic, Rochester, Minn.
Discussion—J. E. Witcher, Amarillo.

Fundus in Hypertension—Charles R. Potts, Houston.
Discussion—Mina Watkins, Lubbock.

Intra-Ocular Foreign Bodies—P. W. Malone, Big Spring.
Discussion—G. M. Wallace, Lubbock.

Significance of Diplacusis Binauralis and Recruitment—K. M. Simonton, Rochester, Minn.
Discussion—Ralph B. Payne, Amarillo.

Exophthalmus—Charles R. Potts, Houston.
Discussion—Nell Sanders, Big Spring.

OCTOBER 4

Obstetrics and Gynecology Section

John B. Rountree, Jr., Lubbock, Chairman.

F. W. Hudgins, Lubbock, Secretary.

Uterine Carcinoma—C. C. Boehler, El Paso.
Discussion—G. E. Peacock, Big Spring.

Management of Obstetric Hemorrhage—J. E. Kanatser, Wichita Falls.
Discussion—D. D. Wall, San Angelo.

Obstetric Practice in 1950—C. C. Boehler, El Paso.

Ovarian Neoplasms—Sponsored by American Cancer Society through Tarrant County Tumor Clinic.

Surgical Section

Alvin Bronwell, Lubbock.

J. G. Morris, Lubbock

Juvenile Inguinal Hernia—Robert Sparkman, Dallas.
Discussion—Sam G. Dunn, Lubbock.

Surgical Treatment of Achalasia—Roland S. Kieffer, St. Louis.
Discussion—R. A. Neblett, Canyon.

Expectant Treatment of Gallbladder Disease—Robert Sparkman, Dallas.
Discussion—Tom R. Hunter, Jr., Wellington.

Surgical Treatment of Hypertension—Roland S. Kieffer, St. Louis.
Discussion—Francis J. Kelly, Amarillo.

Hematuria, Significance and Management—Harry M. Spence, Dallas.
Discussion—A. Lee Hewitt, Lubbock.

The scientific program outlined was presented at the meeting of the Third District Medical Society in Lubbock on October 3 and 4. Commercial exhibits were shown also. Approximately 163 physicians attended.

Speaker at the banquet the evening of October 3 was William M. Gambrell, Austin, President of the State Medical Association. Two section luncheons and a luncheon for the Woman's Auxiliary to the Twelfth District Medical Society were given October 3; another section luncheon was held October 4.

AUXILIARY SECTION

Texans Attend Presidents' Conference

Members of the Woman's Auxiliary to the State Medical Association of Texas who attended the seventh annual conference of State Presidents, Presidents-Elect, and National Chairmen of Standing Committees held November 2 and 3 in Chicago were Mrs. William M. Gambrell, Austin, President, and Mrs. O. W. Robinson, Paris, President-Elect, of the State Auxiliary; and Mrs. George Turner, El Paso, treasurer, and Mrs. Scott C. Applewhite, Dallas, chairman of the finance committee, of the National Auxiliary. The Texas delegation was honored in that Mrs. Gambrell was elected secretary for the conference.

The theme of the program was "Public Service Through Health Education." An innovation which will be continued in future conferences was a panel discussion on the major objectives of the Auxiliary.

AUXILIARY NEWS

Bexar County Auxiliary

The health education committee of Bexar County Auxiliary, headed by Mrs. William Montgomery and Mrs. M. H. Morris, has made arrangements for "Healthy Living in Our County" to be broadcast over a local station. All Bexar County schools and the independent schools in San Antonio will listen to the program during school hours once a week.

Thirty members of the auxiliary have been actively engaged in the Community Chest drive which began October 2. Mrs. Walter Walthall, fourth vice-president, is chairman of the drive for the auxiliary, and Mrs. Rowan E. Fisher co-chairman.

The auxiliary's first meeting of the year was a luncheon October 13 at Oak Hills Country Club. Mrs. William M. Gambrell, Austin, President of the Woman's Auxiliary to the State Medical Association, spoke on "The Challenge of Membership in the Woman's Auxiliary." Dr. W. H. Heck, president of the Bexar County Medical Society, also talked.

Special guests were Dr. J. L. Cochran, adviser to the auxiliary for the coming year, and Mrs. W. E. Bell, Kerrville, council woman for the Fifth District. Mrs. M. A. Ramsdell, retiring county president, gave the invocation.

Mrs. Jack Partain, chairman, and Mrs. Rowan E. Fisher, co-chairman, were in charge of luncheon arrangements. Hostesses were Mesdames James W. Carter, Jr., E. F. Lyon, Jr., E. A. Maxwell, J. B. Miller, Jr., and Brad Oxford.—Mrs. Brad Oxford, Publicity Secretary.

Brazos-Robertson Counties Auxiliary

Seventeen members of Brazos-Robertson Counties Auxiliary met in the home of Mrs. A. G. McGill, Bryan, September 21. Yearbooks were distributed and Mrs. R. B. Grant urged members to recommend *Today's Health* to their friends.

Mrs. L. D. Stuart, president, asked the chairman of standing committees to report at the next meeting. Mrs. McGill, assisted by Mrs. Joseph Cox and Mrs. T. T. Walton, served refreshments.

Cherokee County Auxiliary

The Woman's Auxiliary to the Cherokee County Medical Society heard Mrs. Finis L. Harris review "The Road Ahead" by John T. Flynn at a tea October 26 in Jacksonville. Fifty members and their guests from Rusk, Panola, and Smith Counties attended. Mrs. L. L. Travis, Mrs. R. C. Rucker, and Mrs. R. T. Travis, council woman for District 11, greeted the guests, and Mrs. R. E. Bishop and Mrs. J. T. Boyd served refreshments.—Mrs. J. M. Travis, Sr., Reporter.

Harris County Auxiliary

The Woman's Auxiliary to the Harris County Medical Society held its first executive board meeting, a coffee and business session, at the River Oaks Country Club, Houston, on September 11. Hostesses were Mesdames Thomas L. Royce, C. Marshall Ashmore, W. P. Bonin, Jack G. Brannon, James E. Dailey, Bernard Farfel, Otis Flynt, and Jacob F. Schultz.

The first meeting for the Harris County Auxiliary was held September 25 at the River Oaks Country Club, Houston. A business meeting was followed by a style show and luncheon. Mrs. Jack G. Brannon was chairman for the program and Mrs. Edmond K. Doak and Mrs. L. F. Schuhmacher, Jr., co-chairmen.—Mrs. Lynn Zarr, Publicity Secretary.

Hunt-Rockwall-Rains Counties Auxiliary

Reassembly day for Hunt-Rockwall-Rains Counties Auxiliary was celebrated with a dinner meeting October 10 in Greenville. The following members were hostesses: Mesdames J. W. Ward, H. W. Maier, T. C. Strickland, J. W. Morris, Grady Bruce, S. D. Whitten, J. M. Hanchey, F. B. Arnold, Fred Turbeville, H. E. King, Alice King, W. B. Reeves, and E. T. Fry.

Jefferson County Auxiliary

The Port Arthur chapter of the Jefferson County Auxiliary is setting up a memorial fund to promote research in cancer, poliomyelitis, and heart disease. Mrs. Joseph Lowenstein was named chairman for the fund at a recent meeting of the chapter in the home of Mrs. L. C. Heare, Port Arthur, president, which was attended by eighteen members. Contributions will be accepted from the public for the fund.

The chapter voted to present an annual award to the outstanding graduate of St. Mary's School of Nursing. Mrs. Dwight Curry was named chairman of the award committee. Programs and a budget for the year were discussed.

McLennan County Auxiliary

Members of McLennan County Auxiliary heard Mrs. Zora M. Fiedler, dean of nursing education at Baylor University, speak on "Nursing Education" at the first fall session September 27 in Waco. About fifty members were present. Guests from the Twelfth District Auxiliary were Mrs. Walter Smith, Marlin; Mrs. Raleigh Curtis, Temple; and Mrs. G. V. Brindley, Temple.

Hostesses were Mesdames Milton Spark, chairman, and George C. Bryant, James Colgin, L. D. Collins, Hayes Gidney, N. M. Atkins, H. M. Richey, Jr., Ivy W. Siler, and H. J. Germany.

Medina-Uvalde-Maverick-Val Verde-Edwards-Real-Kinney-Terrell-Zavala Counties Auxiliary

Members of Medina-Uvalde-Maverick-Val Verde-Edwards-Real-Kinney-Terrell-Zavala Counties Auxiliary met in the home of Mrs. C. R. Sutton, Jr., Uvalde, September 8. Mrs. Leroy Guice, Uvalde, was co-hostess for the tea, and assisting

in serving was Mrs. Hershall La Forge. A guest speaker was Mrs. J. W. Hendrick, San Antonio.

The following were elected to office: Mesdames Ellis Gates, Eagle Pass, president; J. W. Williamson, Castroville, vice-president; Mrs. Leroy Guice, Uvalde, second vice-president; Mrs. George Merritt, Uvalde, third vice-president; Mrs. R. M. Montemayor, Eagle Pass, secretary; Mrs. R. N. Graham, Del Rio, treasurer; and Mrs. Robert Landers, Hondo, parliamentarian.

Travis County Auxiliary

Mrs. William M. Gambrell, Austin, President of the Woman's Auxiliary to the State Medical Association, was honor guest and speaker at a style show and luncheon given by the Travis County Auxiliary in Austin on October 17. Approximately ninety members attended.

Mrs. Gambrell was introduced by Mrs. Dalton Richardson, parliamentarian of the Travis County Auxiliary. Officiating at the luncheon was Mrs. Sandi Esquivel, president, who presented the other officers.

Auxiliary members who modeled for the show included Mesdames G. W. Cleveland, Lawrence Griffin, Horace Cromer, Raleigh Ross, Clifford Thorne, John Thomas, David Wade, and David Johnson. Mrs. Roger Busfield was the commentator and fashions were from the French Room, Meta's Millinery Salon, and Leon's Slipper Shop.

Arrangements for the luncheon were supervised by Mrs. Terrence Watt, assisted by Mrs. J. R. Nichols, as co-chairman.

AUXILIARY DEATHS

Mrs. John M. Crawford, Carrizo Springs, died in a San Antonio hospital September 15, 1950. She was the former Miss Glyn McShan, a native of Henderson County and a charter member of the Woman's Auxiliary to LaSalle-Frio-Dimmitt Counties Medical Society. Survivors are her husband, Dr. John M. Crawford, two daughters, Ann and Linda Crawford, and her father, Eugene McShan, of Carrizo Springs; and one sister, Mrs. R. L. McKissack, and two brothers, John and Ernest McShan, all of Dallas.

Mrs. Laura Day (F. H.) Tucker, Nacogdoches, the mother of the late Dr. Fred Tucker of Nacogdoches, died June 16, 1950. Mrs. Tucker was a member of the Woman's Auxiliary to Nacogdoches County Medical Society.

DEATHS

SAM WEBB

Dr. Sam Webb, Dallas, Texas, died July 23, 1950, in a Dallas hospital.

Born August 9, 1882, in Waco, Dr. Webb was the son of Sam and Ella (Downs) Webb. He attended public school in Albany and the Reynolds Presbyterian Academy, Albany; in 1902 and 1903 he studied at the University of Texas School of Medicine, Galveston. Dr. Webb was awarded a medical degree in 1905 from the University of Nashville Medical Department, Nashville. After an internship in a Houston infirmary, Dr. Webb first practiced as chief surgeon for the Kirby Lumber Company in Call. In 1907 he was appointed chief surgeon for the Houston and Texas Central Railroad and was placed in charge of the company's hospital at Walnut Springs. He was transferred in 1909 to Stamford, where in 1910 with the late Dr. M. E. Lott he built and operated the Stamford Sanitarium. With the sale of the Houston and Texas Central Railroad to the Missouri-Kansas-Texas Railroad in 1910 Dr. Webb was transferred to Waco and became chief surgeon for the latter company, a position which he held for ten years. He moved to Dallas in 1912 and practiced there until 1942, when because of his failing health he was forced to retire.

Dr. Webb was a member of the State Medical Association and the American Medical Association through Bosque County, Jones County, McLennan County, and Dallas County Medical Societies, in succeeding order. Secretary of the Section on Surgery of the Association in 1923, he was named to honorary membership in 1944. A fellow of the American College of Surgeons and a member of the Texas Railway and Traumatic Surgical Association, he was a member of the founders' group of the American Board of Surgery. Dr. Webb was one of the organizers of the Baylor Dallas Unit which served in the Army in 1918; he was unable to accept active duty, however, because of an old ankle injury. A member of the Episcopal Church, Dr. Webb was a member of the Masonic Order, International Order of Odd Fellows, Knights of Pythias, and Woodmen of the World. He was formerly on the staffs of St. Paul, Methodist, Medical Arts, and Baylor Hospitals and was an associate professor of surgery at Baylor University when it was located in Dallas, and clinical professor of surgery at the Southwestern Medical School of the University of Texas, Dallas.

Dr. Webb married Miss Alline Navarre de Maret in Albany on February 23, 1915. She survives as do a son, Sam Nail Webb, Jackson, Miss.; two brothers, Graham Webb, Sr., and James Richard Webb, Albany; four sisters, Mrs. Leon F. Russ, Dallas; Mrs. Joe B. Matthews and Mrs. John C. Miller, Albany; and Mrs. Joe L. Ward, Waco; and two grandchildren.

M. SMITH

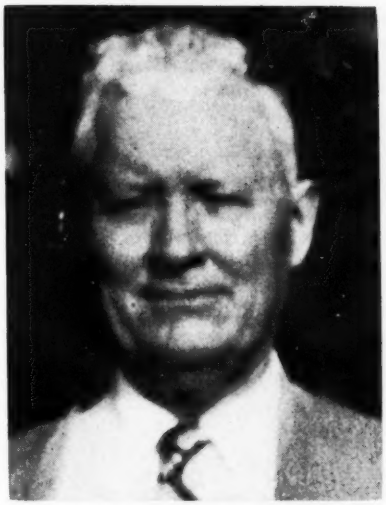
Dr. Mouldon Smith, McAllen, Texas, died July 24, 1950, in McAllen, after a long illness from carcinoma of the ascending colon.

Dr. Smith was born in Pittsburgh, Miss., on March 12, 1888, the son of W. Henry and Virginia (Patterson) Smith. Coming to Texas as a child with his parents, he acquired his academic education at White's Chapel High School and East Texas State Normal College, Commerce. In 1915 he was graduated from Vanderbilt School of Medicine, Nashville; he later did postgraduate study at the University of Pennsylvania, Philadelphia, and in New York City. Dr. Smith was a resident in surgery at Holy Name Hospital, Teaneck, N. J., and then began his medical career in Parkin, Ark., remaining there for one year, then practiced in Roby, Texas, for one year. During the first World War for two years he served in the Army Medical Corps. After his discharge as a major, Dr. Smith practiced in Ardmore, Tenn., for eight years, then moved to Texas. He engaged in medical practice in Mission for twenty years, then moved to McAllen, where he practiced for three years until forced by ill health to retire. His specialty was surgery.

For many years Dr. Smith was a member of the State

An obituary ordinarily will not be published more than four months after date of death. Cooperation in reporting deaths of physicians and in furnishing appropriate biographical material promptly is solicited.

Medical Association and the American Medical Association through Fisher-Stonewall and Hidalgo-Starr Counties Medical Societies. He was a past president of the latter organization. Dr. Smith was a member of the Christian Church, the Masonic Order, the Benevolent and Protective Order of Elks, and Lions Club.



DR. MOULDON SMITH

Dr. Smith married Miss Ida L. Gillespie in Waco on June 3, 1918. She survives as do two sons, Dr. Lloyd Smith and Mouldon B. Smith, Jr., D.D.S., McAllen; a daughter, Miss Ann Smith, McAllen; and a sister, Mrs. J. M. Harvard, Navarro.

W. D. FRANCIS

Dr. W. D. Francis, Lampasas, Texas, died in an Austin hospital September 23, 1950.

Dr. Francis was born January 19, 1858, in Burnet County, Texas, the son of John L. and Sarah M. Francis. After attending the public schools of Burnet County and the University of Texas School of Medicine, Galveston, he was graduated in 1897 from the Missouri Medical College, St. Louis; in 1917 he took a postgraduate course in diseases of the eye, ear, nose, and throat at Washington University, St. Louis. Immediately after his graduation Dr. Francis began his medical career in Lampasas, where he practiced until a short time prior to his death. For twenty-nine years he was a local physician and surgeon for the Southern Pacific Lines. Dr. Francis was mayor of Lampasas for four years and served as city and county health officer for several years. He was a member of the Methodist Church.

Dr. Francis was a member of the State Medical Association and the American Medical Association through Lampasas-Burnet-Llano Counties Medical Society. He formerly served the society as president and was elected to honorary membership in the Association in 1934.

J. H. BENTON

Dr. James Hamilton Benton, Fort Worth, Texas, died from myocardial infarction September 16, 1950, in a Fort Worth hospital.

Born June 15, 1916, in San Angelo, Dr. Benton was the son of Mr. and Mrs. W. Bascom Benton. He received his early education in San Angelo College, San Angelo, and the University of Minnesota, Minneapolis, and was graduated in March, 1942, from the University of Texas School of Medicine, Galveston. He served an internship at John Sealy Hospital, Galveston, from 1942 to 1943 and was a resident and instructor in neuropsychiatry at the University of Texas Medical Branch, Galveston, until 1946. He then practiced in Fort Worth until his death, specializing in neuropsychiatry.

Dr. Benton was a member of the American Medical Association and the State Medical Association through Tarrant County Medical Society. A former vice-president of the

DR. JAMES H. BENTON

Texas Neuropsychiatric Association and vice-president of the Texas Society for Mental Hygiene, he was a member of the American Psychiatric Association. He belonged to Alpha Omega Alpha honorary medical fraternity and Phi Beta Pi medical fraternity. Dr. Benton was a member of the board of directors of Tarrant County Guidance Center.

On November 20, 1940, in San Antonio Dr. Benton married Miss Kathryn Lee, who survives. Also surviving are his daughter, Carolyn Kay, and son, James H. Benton, Jr., Fort Worth; and his parents, Mr. and Mrs. W. Bascom Benton, and brother, Robert E. Benton, San Angelo.

W. L. EDWARDS

Dr. William Leslie Edwards, Dallas, Texas, died from myocardial infarction August 9, 1950, in a local hospital.

Dr. Edwards was born March 4, 1890, in Arkadelphia, Ark., the son of Robert and Mary Alice (Daniel) Edwards. Receiving his early education in Arkadelphia High School and Ouachita College, Arkadelphia, he was graduated in 1921 from Baylor University College of Medicine, Dallas. After an internship at St. Paul's Hospital, Dallas, he began his practice in Dallas, where he practiced continuously for twenty-eight years until his death. He was a staff member of Baylor Hospital.

Throughout his professional life Dr. Edwards was a member of the State Medical Association and American Medical Association through Dallas County Medical Society; he was formerly auditor of the society. During the first

World War he was in officers' training school. A member of the Baptist Church, Dr. Edwards was a thirty-second degree Mason.

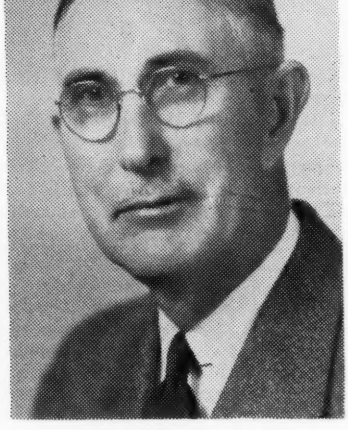
On November 28, 1918, in Beaumont, Dr. Edwards married Miss Martha Effie Caldwell, who survives, as do their son, Dr. W. L. Jack Edwards, Dallas, and two brothers, R. C. Edwards and J. W. Edwards, San Antonio.

W. B. REEVES

Dr. Walter Bascum Reeves, Greenville, Texas, died October 1, 1950, in a Dallas hospital from chronic myocarditis.

Born at Winnsboro on July 27, 1876, Dr. Reeves was the son of William Alphonso and Sarah Elizabeth Reeves. He acquired his academic education at Burleson College, Greenville, and Baylor University, Waco, and was graduated in 1905 from St. Louis University School of Medicine, St. Louis. He later took postgraduate studies at Tulane University, New Orleans, and in St. Louis and Chicago. Beginning his practice in Wapanucka, Okla., when it was in Indian Territory, where he remained for thirteen years, Dr. Reeves in 1918 moved to Greenville, practicing there continuously for thirty years until forced to retire because of ill health.

A member of the State Medical Association and the American Medical Association through Hunt-Rockwall-Rains Counties Medical Society, Dr. Reeves was active in his profession. He was formerly president of his county medical society in Oklahoma, of Hunt-Rockwall-Rains Counties Medical Society, and of the Fourteenth District Medical Society.



DR. W. B. REEVES

Dr. Reeves was a member of the Committee on Public Health of the State Medical Association and was a member of its House of Delegates at his death. During World War II he was president of the Texas Railway and Traumatic Surgical Association; for twelve years prior to his death he was district surgeon for the Louisiana and Arkansas Lines. He was a member of the Texas Public Health Association and was a member of the U. S. Army Reserve. He was vice-president and a director of the Citizens' National Bank, Greenville, an officer of the Hunt County Fair and Live Stock Association, chairman of the county organization for children's welfare, and a member of the Rotary Club. For many years he was a deacon of the First Baptist Church.

In 1905 in Lone Oak Dr. Reeves married Miss Lula De Lawler. His wife survives, as do a son, Lawler Reeves, Detroit; a daughter, Mrs. Clayton Field, Jr., Marshall; two brothers, William A. Reeves, Ada, Okla., and Sam W. Reeves, Lubbock; three sisters, Mrs. T. S. Mitchell and Mrs. Dovie Rabb, Greenville, and Mrs. W. C. Henley, Albuquerque, N. Mex.; and five grandchildren.

J. H. KELLEY

Dr. John Harrison Kelley, Pampa, Texas, died from melanoma at his home September 30, 1950, about two weeks prior to the opening on October 16 of the clinic which he and his son, Dr. Frank Kelley, had built in Pampa. Dr. Frank Kelley and Dr. Raymond Laycock will operate the new clinic.

Dr. Kelley was born August 26, 1882, in Knoxville, the son of Mr. and Mrs. James H. Kelley. He received his preliminary education in Clarendon High School, Clarendon College, and Goodnight College and attended Southwestern Medical College, Dallas, for two years. In 1911 he was graduated from the University of Louisville Medical Department, Louisville. Dr. Kelley for more than twenty successive years attended the Dallas Southern Clinical Society Conference. After an internship at King's Daughters Hospital, and Childrens Hospital, Louisville, Dr. Kelley in 1911 began his practice in Miami. In 1929 he moved to Pampa, where he remained in practice continuously until shortly before his death.

DR. JOHN H. KELLEY

Since 1911 Dr. Kelley had been a member of the State Medical Association and the American Medical Association successively through Roberts, Potter, and Gray-Wheeler-Hansford-Hemphill-Lipscomb-Roberts-Ochiltree-Hutchinson-Carson Counties Medical Societies. He was a member of the Third District Medical Society and a medical adviser to the Selective Service Board during both World Wars. Dr. Kelley was a member of the Lions Club and of the Methodist Church.

In Clarendon on August 17, 1904, Dr. Kelley married Miss Martha Elkins, who survives. Also surviving are three sons, Dr. Frank W. Kelley, Harry Kelley, and William H. Kelley, Pampa; two brothers, Laroy Kelley, and Joe H. Kelley, Houston; and three sisters, Mrs. Oran Patterson, Galveston, Mrs. C. J. Hall, Cleburne, and Mrs. James E. Moore, Seattle, Wash.